Community Environmental Response Facilitation Act (CERFA) Report

Alabama Army Ammunition Plant Talladega County, Alabama

Prepared for:

U.S. ARMY ENVIRONMENTAL CENTER
ABERDEEN PROVING GROUND, MARYLAND 21010

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This report presents the results of the Community Environmental Response Facilitation Act (CERFA) investigation conducted by The Earth Technology Corporation (TETC) at Alabama Army Ammunition Plant, a U.S. Government property selected for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. Under CERFA (Public Law 102-426), Federal agencies are required to identify real property that can be immediately reused and redeveloped. Satisfying this objective requires the identification of real property where no hazardous substances or petroleum products, regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), were stored for one year or more, known to have been released, or disposed.

The Alabama Army Ammunition Plant is a 2,187-acre site (more or less) located in Talladega County, Alabama, approximately 5 miles north of Childersburg, Alabama. The installation's primary mission was to manufacture explosives. Activities associated with the property that have environmental significance are the former manufacturing of explosives, the recycling of spent acids, and the disposal of wastes resulting from these operations. The facility is on U.S. Environmental Protection Agency's National Priorities List.

TETC reviewed existing investigation documents; U.S. Environmental Protection Agency (USEPA), Commonwealth of Kentucky, and county regulatory records; environmental data bases; and title documents pertaining to Alabama Army Ammunition Plant during this investigation. In addition, TETC conducted interviews and visual inspections of Alabama Army Ammunition Plant as well as visual inspections and data base searches for the surrounding properties.

Information in this CERFA Report was current as of April 1994. This information was used to divide the installation into four categories of parcels: CERFA Parcels, CERFA Parcels with Qualifiers, CERFA Disqualified Parcels, and CERFA-Excluded Parcels, as defined by the Army.

The total BRAC property acreage at Alabama Army Ammunition Plant is 2,187 acres. Areas of the facility that have no history of CERCLA-regulated hazardous substance or petroleum product release, disposal, or storage are categorized as CERFA Parcels. TETC determined that approximately 1,279 acres of the 2,187-acre property fall within the CERFA Parcel category, predominantly in the northwestern and southeastern part of the installation.

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LIST OF ACRONYMS & ABBREVIATIONS

BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
ERIIS	Environmental Risk Information and Imaging Services
IRP	Installation Restoration Program
PA	Preliminary Assessment
PCB	Polychlorinated Biphenyl
RCRA	Resource Conservation and Recovery Act
TETC	The Earth Technology Corporation
USAEC	U.S. Army Environmental Center
USEPA	U.S. Environmental Protection Agency

EXECUTIVE SUMMARY

This report presents the results of the Community Environmental Response Facilitation Act (CERFA) investigation conducted by The Earth Technology Corporation (TETC) at Alabama Army Ammunition Plant, a U.S. Government property selected for closure by the Base Realignment and Closure (BRAC) Commission under Public Laws 100-526 and 101-510. Under CERFA (Public Law 102-426), Federal agencies are required to identify real property that can be immediately reused and redeveloped. Satisfying this objective requires the identification of real property where no hazardous substances or petroleum products, regulated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), were stored for one year or more, known to have been released, or disposed.

The Alabama Army Ammunition Plant is a 2,187-acre site (more or less) located in Talladega County, Alabama, approximately 5 miles north of Childersburg, Alabama. The installation's primary mission was to manufacture explosives. Activities associated with the property that have environmental significance are the former manufacturing of explosives, the recycling of spent acids, and the disposal of wastes resulting from these operations. The facility is on U.S. Environmental Protection Agency's National Priorities List.

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The total BRAC property acreage at Alabama Army Ammunition Plant is 2,187 acres. Areas of the facility that have no history of CERCLA-regulated hazardous substance or petroleum product release, disposal, or storage are categorized as CERFA Parcels. TETC determined that approximately 1,279 acres of the 2,187-acre property fall within the CERFA Parcel category, predominantly in the northwestern and southeastern part of the installation.

Areas of the facility that had no evidence of such release, disposal, or storage, but contained hazards not regulated by CERCLA (such as asbestos, radon gas, lead-based paint, unexploded ordnance, radionuclides, or not in-use equipment containing polychlorinated biphenyl) were categorized as CERFA Parcels with Qualifiers. Approximately 6 acres of the installation were identified as CERFA Parcels with Qualifiers.

Areas of the facility, for which there is a history of release, disposal, or storage for one year or more of CERCLA-regulated hazardous substances or petroleum products or had a release of hazards identified above were categorized as CERFA Disqualified Parcels. Nine hundred and two (902) acres of installation property are identified as CERFA Disqualified Parcels.

Areas on the facility that will be retained by the Federal Government or that have already been transferred by deed are categorized as CERFA-Excluded Parcels. None of the property was identified as CERFA-Excluded Parcels.

The primary objective of CERFA is satisfied by the identification of CERFA Parcels and CERFA Parcels with Qualifiers. As a result, concurrence has been sought from the regulatory agencies on these two categories of parcels. This CERFA Report has been reviewed by the U.S. Army Environmental Center (USAEC), Alabama Army Ammunition Plant, Region IV USEPA, and the Alabama Department of Environmental Management. Comments from these organizations have been incorporated into this final report. Any unresolved issues from the regulatory agencies are identified.

This report contains maps that summarize the categorization of Alabama Army Ammunition Plant on the basis of the above definitions. This Executive Summary should be read only in conjunction with the complete CERFA Report for this installation. The CERFA Report provides the relevant environmental history to substantiate the parcel categorization. This report does not address other property transfer requirements that may be applicable under the National Environmental Policy Act, nor does it address natural resource considerations such as the threat to plant or animal life.

1.0 INTRODUCTION

This Community Environmental Response Facilitation Act (CERFA) Report for Alabama Army Ammunition Plant was prepared by The Earth Technology Corporation (TETC) under Contract No. DAAA15-91-0009, Delivery Order 0010, for the U.S. Army Environmental Center (USAEC), Base Closure Division. The purpose and scope of the work are presented in this section. The sources used to conduct the investigations for the CERFA Report are identified in Section 2. Background information for the Alabama Army Ammunition Plant is provided in Section 3. CERFA investigation results are discussed in Section 4. Finally, Section 5 includes maps that provide Alabama Army Ammunition Plant boundaries, land transfers, and delineate the parcels of the installation according to CERFA Parcel identification requirements.

1.1 PURPOSE AND SCOPE

Public Laws 100-526 and 101-510 designated more than 100 Army facilities for closure and realignment. As a result, it became necessary to expedite the environmental investigation and cleanup process prior to the release and reuse of Army Base Realignment and Closure (BRAC) property. The BRAC environmental restoration program was established with the first round of base closures (BRAC 88) and continued with subsequent rounds (BRAC 91, BRAC 93, etc.). The BRAC program is similar to the Army's Installation Restoration Program (IRP), but it has been expanded to include such categories of contamination as asbestos, radon, polychlorinated biphenyls (PCBs), and others that are not normally addressed under the IRP.

Normally, the first step in the BRAC environmental restoration program was the preparation of Enhanced Preliminary Assessments (PAs). However, an Enhanced PA was not conducted at Alabama Army Ammunition Plant because sufficient information was available from documents generated from previous environmental investigations.

In October 1992, Public Law 102-426, CERFA, amended Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and established new requirements for contamination assessment and regulatory agency notification/concurrence for Federal facility closures. CERFA requires the Federal Government to identify property where no CERCLA-regulated hazardous substances or petroleum products were stored, released, or disposed before ending activities on real property owned. The Government's assessment of a facility as uncontaminated must be concurred with by the appropriate regulatory agencies (U.S. Environmental Protection Agency [USEPA] on National Priorities List bases and the State on non-National Priorities List bases). The Alabama Army Ammunition Plant was placed on the National Priorities List in 1987. These requirements retroactively affect the Army BRAC 88 and BRAC 91 environmental restoration activities and are being implemented at BRAC 93 sites concurrently with their Enhanced PAs. The primary objective of CERFA is that Federal agencies expeditiously identify real property that can be rapidly reused and redeveloped. (However, CERFA does not mandate that the Army transfer real property so identified.)

TETC was awarded the task to identify real property where no CERCLA-regulated hazardous substances or petroleum products were stored, released, or disposed at 12 BRAC 88 sites. This report presents the findings of this CERFA response for the Alabama Army Ammunition Plant, Talladega County, Alabama.

The original Alabama Army Ammunition Plant was divided into three major areas: the leaseback area, the General Services Administration area, and the industrial area. The majority of the General Services Administration area is referred to as Area A; the industrial area is referred to as Area B. Both the leaseback area and Area A were sold; Area B remains under U.S. Army ownership and is referred to in this report as the BRAC property. The National Priorities List site includes both Area A and Area B.

1.2 Definition of Terms

The following definitions are used to categorize and label parcels identified on the installation:

- ★ CERFA Parcel -- A portion of the installation real property for which investigation reveals no evidence of storage for one year or more, release, or disposal of CERCLA hazardous substances, petroleum, or petroleum derivatives and no evidence of being threatened by migration of such substances. CERFA Parcels include areas where PCB-containing equipment is in operation, but there is no evidence of release. CERFA Parcels also include any portion of the installation which once contained related environmental, hazard, or safety issues including unexploded ordnance (UXO) located on firing ranges or impact areas, radon, stored (not in-use) PCB-containing equipment, asbestos contained within building materials, and lead-based paint applied to building material surfaces, but which have since been fully remediated or removed.

- ★ CERFA Parcel with Qualifier(s) -- A portion of the installation real property for which investigation reveals no evidence of storage for one year or more, release, or disposal of CERCLA hazardous substances, petroleum, or petroleum derivatives and no evidence of being threatened by migration of such substances. Parcel does however contain related environmental, hazard, or safety issues including unexploded ordnance (UXO) located on firing ranges or impact areas, radon, radionuclides contained within products being used for their intended purposes, asbestos contained within building materials, lead-based paint applied to building material surfaces, or stored (not in-use) PCB containing equipment.

- ★ CERFA Disqualified Parcel -- A portion of the installation real property for which investigation reveals evidence of a release, disposal, or storage for more than one year of a CERCLA hazardous substance, petroleum, or petroleum derivatives; or a portion of the installation threatened by such a release or disposal. CERFA Disqualified Parcels also include any portion of the installation where PCB, asbestos containing material, lead-based paint residue, or any ordnance has been disposed of, and any locations where chemical ordnance has been stored. Additionally, CERFA Disqualified Parcels include any areas in

which CERCLA hazardous substances or petroleum products have been released or disposed of and subsequently fully remediated.

- ★ CERFA-Excluded Parcel -- A portion of the installation real property retained by the Department of Defense, and therefore not explicitly investigated for CERFA. CERFA-Excluded Parcels also include any portions of the installation which have already been transferred by deed to a party outside the Federal Government, or by transfer assembly to another Federal agency.

The following labels are used in conjunction with the identified parcels:

- ★ P = CERFA Parcel
- ★ Q = CERFA Parcel with Qualifier(s)
- ★ D = CERFA Disqualified Parcel
- ★ E = CERFA-Excluded Parcel

Each parcel has been given a unique number to which the appropriate labels are attached. For example, 4P indicates that the fourth parcel is in the CERFA Parcel category.

The presence of hazards not regulated by CERCLA places a parcel in the CERFA Parcel with Qualifier category. This is indicated by the following labels:

- ★ A = Asbestos
- ★ L = Lead-based Paint
- ★ P = PCB
- ★ R = Radon
- ★ X = Unexploded Ordnance
- ★ RD = Radionuclides

For example, the designation 5Q-L indicates that the fifth parcel is in the CERFA Parcel with Qualifiers category because of the presence of lead-based paint. Similarly, parcel label 8Q-X/R indicates that the 8th parcel is in the CERFA Parcel with Qualifiers category because of the presence of unexploded ordnance and radon.

The following designations are used to indicate the type of contamination or storage present in a parcel that has been placed in the CERFA Disqualified category:

- ★ PR = Petroleum Release
- ★ PS = Petroleum Storage
- ★ HR = Hazardous Substance Release
- ★ HS = Hazardous Substance Storage

For example, 12D-HR indicates that the twelfth parcel is in the CERFA Disqualified category because of evidence of hazardous substance release.

For all parcels, "(P)" is used to indicate that the presence of a contaminant is possible, but that data are unavailable for verification. For example, 9Q-A(P) indicates that the ninth parcel is in the CERFA Parcel with Qualifiers category because of the possible presence (unverified) of asbestos-containing material. Similarly, parcel label 15D-HR/PS/A(P) indicates that the 15th parcel is classified as a CERFA Disqualified Parcel on the basis of evidence of a hazardous substance release and petroleum storage. It may also have asbestos-containing material.

1.3 GEOGRAPHICAL AND ENVIRONMENTAL SETTING

Alabama Army Ammunition Plant is located 5 miles north of Childersburg and 40 miles southeast of Birmingham. Figure 1-1 presents the geographic location of the installation. The installation is located near the junction of the Talladega Creek and the Coosa River. The current boundaries of the Alabama Army Ammunition Plant BRAC property encompass a total area of 2,187 acres that are surrounded primarily by the excessed property, farmland, woodland, and some industrial development.

1.3.1 Physical Setting

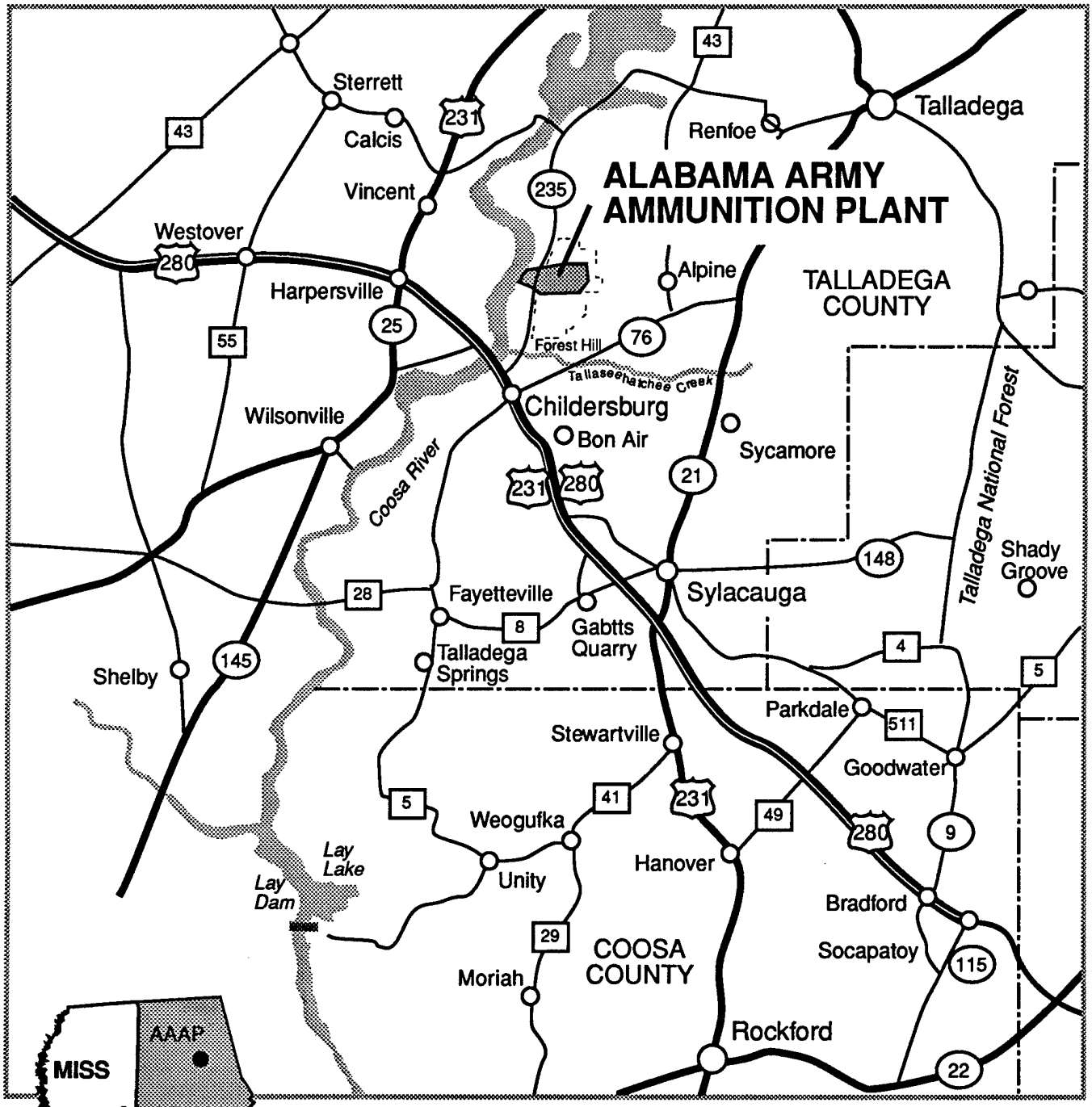
Prior to the construction of Alabama Army Ammunition Plant, the area consisted of farms, woodlands, and wetlands. No natural ponds existed on the installation during its operation; however, two large storage lagoons were constructed to retain industrial wastes. The Army instituted a woodland management plan following closure operations, which extensively modified the installation by allowing for the planting of acres of controlled pine forest. Currently, much of the planted pine has been harvested, and reforestation has occurred through natural revegetation. Extensive wooded swamp and open pond areas have developed in the drainage systems at Alabama Army Ammunition Plant primarily as a result of drainway damming by beavers.

1.3.2 Surface Water

The surface drainage systems at Alabama Army Ammunition Plant consist of natural streams, artificially created ditches and impoundments, and low areas that receive and accumulate surface water. Surface water runoff from the installation drains either west or southwest into the Coosa River. A small portion of the southern and eastern side of the installation drains toward Talladega Creek, a tributary of the Coosa River. Small natural drainways that were enlarged and rerouted to provide drainage from the various manufacturing operations include the Crossover Ditch, the Red-Water Ditch, and the Beaver Pond drainage system. These systems account for approximately 65 percent of all surface drainage systems.

1.3.3 Geology and Soils

The dolomite underlying Alabama Army Ammunition Plant is thick- to medium-bedded, cherty, and penetrated by numerous cavities, joints, and fractures. The dolomite is overlain by residual soil, derived from it by weathering processes. This soil matrix consists primarily of clay, with



General Location of Alabama Army Ammunition Plant, Alabama

Figure 1-1

some silt, sand, and occasional chert boulders, and varies in thickness from less than 1 meter to over 15 meters.

1.3.4 Hydrogeology

Groundwater is present from 15 to 45 feet below ground surface. In light of groundwater migration rates at Alabama Army Ammunition Plant, it is unlikely that contaminated groundwater will move beyond the boundaries of the site. Potable groundwater from the dolomite aquifer of the Coosa Valley supplies the needs of the communities, homes, farms, and industries around the installation. The majority of the successful wells draw water from solution cracks and cavities in the dolomite. A few wells are completed in the residual soil, but these wells are less productive than those drilled into the dolomite. An estimated 700 people rely on groundwater as their water source.

2.0 SCOPE OF INVESTIGATION

The scope of this CERFA investigation followed the protocol established in Public Law 102-426 supplemented by Department of Defense Policy on the Implementation of CERFA dated May 19, 1993. This section describes the sources that were used during the CERFA investigation conducted for Alabama Army Ammunition Plant BRAC property. Relevant information available from previous environmental studies are presented. Findings from Federal, State, and local government regulatory records, installation documents, aerial photographs, and personnel interviews are addressed. The visual inspection methods used during the site survey are identified.

2.1 EXISTING DOCUMENTS

Existing investigation documents and aerial photographs were reviewed to evaluate pertinent information that could be used as part of this CERFA Report. These documents are summarized below and listed in Appendix A, "Reference List for Alabama Army Ammunition Plant." Primary source documents containing CERFA criteria information are summarized in Table 2-1.

2.1.1 Installation Assessment of Alabama Army Ammunition Plant, Report No. 130 (May 1978)

This report (which consisted of a records search) was prepared to confirm previously known areas of contamination and to determine whether other (undocumented) contaminated areas exist. It concluded that areas were potentially contaminated with chemical and explosive manufacturing wastes, including trinitrotoluene, dinitrotoluene, trinitrophenyl methylnitramide (tetryl), smokeless powders, acid/organic compounds, and heavy metals; that excess contaminated surface water may migrate during inclement weather; and that the installation was potentially contaminated with lead compounds that spread when buildings were demolished by burning.

2.1.2 Environmental Survey of Alabama Army Ammunition Plant (July 1981)

The objective of the survey was to determine the extent of contamination resulting from past activities. The Alabama Army Ammunition Plant was divided into three major areas. The industrial area was the central portion of the plant used in the production of high explosives. The leaseback area included the nitrocellulose and smokeless powder production lines and associated facilities. The remainder of the installation was identified as the General Services Administration area and includes the former plant administration facilities, storage and shipping facilities, the magazine area, the cannon range, and the small arms ballistics range.

Sampling and analysis of groundwater, surface water, sediments, soils, buildings, and industrial sewers were conducted. Explosives-related contaminants were detected in all environmental matrices, including the groundwater in the center of the explosives manufacturing area. Sampling found no evidence of contamination in the surface drainage beyond the boundaries of Alabama Army Ammunition Plant. Principal organic contaminants were trinitrotoluene, tetryl,

TABLE 2-1
SUMMARY OF EXPLORATORY ENVIRONMENTAL SURVEY AND REMEDIAL INVESTIGATION, ALABAMA ARMY AMMUNITION PLANT, TALLADEGA COUNTY, ALABAMA

CERFA Label	Environmental Survey (July 1981)	Remedial Investigation
Asbestos	Found asbestos in soils, identified locations, and estimated quantities.	Not within the scope of this investigation.
Lead-based paint	Not within the scope of this investigation.	Not within the scope of this investigation.
Polychlorinated biphenyls	Identified and sampled 3 potential PCB sites and found no indication of PCB contamination.	Not addressed in this report.
Radon	Not within the scope of this investigation.	Not within the scope of this investigation.
Unexploded ordnance	No unexploded ordnance activities identified in site activities.	Not within the scope of this investigation.
Radionuclides	No information available concerning radioactive materials.	Not within the scope of this investigation.
Petroleum release/disposal	No releases or disposal of petroleum products identified.	Not addressed in this report.
Petroleum storage	Underground storage tanks not addressed in this report.	Underground storage tanks not addressed in this report.
Hazardous substance release/disposal	Confirmed contamination of sediments, soils, sewers, and groundwater from hazardous materials/release. Identified most serious problems in Industrial Area (BRAC property).	Quantified the extent of contamination in soil, groundwater, surface water, and sediments.
Hazardous substance storage/disposal	Storage activities had ceased at the time of this report and many of the buildings had been demolished. No records were available identifying previous storage areas.	Not addressed in this report.

Key: CERFA = Community Environmental Response Facilitation Act
PCB = Polychlorinated Biphenyls
BRAC = Base Realignment and Closure

2,2-dinitrotoluene, and 1,3,5-trinitrobenzene. Lead and asbestos contamination was also detected in the soils. Many of the buildings that remained standing contained asbestos with trace levels of nitrocellulose contamination and/or high explosive residues. The industrial sewer system was also identified as contaminated with nitroaromatic materials, explosives, and propellants.

2.1.3 Confirmatory Environmental Survey, Alabama Army Ammunition Plant, Final Report (June 1983)

The survey was conducted to determine the extent of contamination and contaminant migration related to the production and disposal of explosive compounds. Sampling activities were based on the results of the Environmental Survey. Soils, sediments, and groundwater in the southern and northern trinitrotoluene manufacturing areas were found to be contaminated with nitroaromatic compounds. No significant amounts of nitroaromatic compounds were found in other manufacturing and disposal areas that were investigated. The deeper groundwater was not significantly contaminated. Nitroaromatic contaminant migration was found in the shallow groundwater but was not believed to reach the installation boundary. Any nitroaromatic contamination reaching the western installation boundary would be diluted below regulatory limits in the Coosa River.

2.1.4 Alabama Army Ammunition Plant Remedial Investigation Final Report (July 1986)

The Remedial Investigation Report presented the hydrologic conditions of the site and quantified the extent of contamination in soil, groundwater, surface water, sediments, and underground process lines. The Remedial Investigation survey yielded or confirmed the following:

- ★ No significant contaminant migration has occurred in the surface or groundwater as a result of past industrial activities in 19 study areas.
- ★ Sediments of the three major drainage systems (Beaver Pond drainage system, Crossover Ditch, and Red Water Ditch) are contaminated with nitroaromatic compounds.
- ★ Runoff from the spoil piles and occasional discharge from contaminated sewer lines present the potential for contaminate migration through the upstream surface waters of the Red Water Ditch.
- ★ Nitroaromatic contamination exists in the shallow groundwater beneath the southern and northern trinitrotoluene manufacturing areas.
- ★ As a result of explosives manufacturing activities and subsequent demolition of buildings, the soils of the southern and northern trinitrotoluene manufacturing areas and the old burning ground and sediments of the Red Water Ditch contain nitroaromatic residues. Contamination detected in soil, although well below the maximum levels permitted for industrial use, was identified as a source of groundwater contamination.

- ★ All soils tested for reactivity were found to be nonreactive.
- ★ Extractable lead above the extraction procedure toxicity limit was detected in soil at the lead remelt facility.
- ★ Asbestos materials were scattered over all areas where buildings were demolished. The sanitary landfill and the demolition landfill also contained asbestos. No asbestos was found to be migrating through surface waters.
- ★ Many of the buildings that existed at the time of the study were contaminated with low levels of nitroaromatic compounds.
- ★ Beaver Pond Stream was contaminated with nitroaromatic compounds as a result of groundwater inflow; however, the levels of contamination in the stream are below those requiring remedial action.

2.1.5 *Draft Supplemental Remedial Investigation/Feasibility Study for Area B, Alabama Army Ammunition Plant (October 1990)*

The Draft Supplemental Remedial Investigation/Feasibility Study was prepared to fill data gaps in the Remedial Investigation for Area B and to answer concerns identified by USEPA. It covers eight study areas (propellant shipping area, northern and southern trinitrotoluene manufacturing areas, tetryl manufacturing area, flashing ground, lead remelt facility, rifle powder finishing area, red water ditch, and the crossover ditch) within Area B that were identified by USEPA as sites requiring Resource Conservation and Recovery Act (RCRA) postclosure action under Part 264, Subpart G. During the investigation, no significant contamination migration was found to be occurring in the shallow or deep aquifers of the combined (northern and southern) trinitrotoluene manufacturing areas. At the flashing ground, no contamination was found in the deep aquifer; contamination in the shallow aquifer was confined and was not significantly migrating. No detectable concentrations of nitroaromatic compounds or tetryl were detected in the surface water or sediment collected from the Red Water Ditch, the Crossover Ditch, and the Beaver Pond Drainage System.

2.1.6 *Remedial Investigation/Feasibility Study of the Industrial Sewer System, Alabama Army Ammunition Plant (September 1991)*

This report defines the nature and extent of contamination within the industrial sewer system that served the four former production areas--the combined trinitrotoluene manufacturing area, tetryl manufacturing area, and acid/organic manufacturing area. On the basis of the results of the Remedial Investigation, it was determined that soils, ditch sediments, and surface water in the vicinity of the sewer lines and manholes at the combined trinitrotoluene manufacturing area and the tetryl manufacturing area were contaminated to various degrees by nitroaromatic compounds. The Feasibility Study addressed remediation of industrial sewer lines and manholes in these areas. The remedial action recommended for the industrial sewer system was excavation, on-site mobile rotary kiln incineration, and offsite landfilling.

2.1.7 Record of Decision, Alabama Army Ammunition Plant, Alabama Stockpile Soils Area Operable Unit (December 1991)

The Record of Decision presented the selected remedial action for the Stockpile Soils Area Operable Unit. The Operable Unit consisted of stockpiled soil in Building TC4B, which was roofed with a concrete slab covered with an impermeable membrane. The document states that actual or threatened release of hazardous substances from this site, if not remediated, may present an imminent and substantial threat to public health, welfare, or the environment. The principal threats posed by the stockpile soils were from explosives, lead, and asbestos-containing material. The selected remedy consists of on-site thermal treatment of stockpile soils, on-site disposal of treated soil, and on-site or offsite disposal of asbestos-containing material.

2.1.8 Supplemental Remedial Investigation/Feasibility Study for Area B, Alabama Army Ammunition Plant, Final Baseline Risk Assessment (April 1992)

This report is a component of the Remedial Investigation/Feasibility Study for Area B of Alabama Army Ammunition Plant. The purpose of the Risk Assessment was to determine the health and environmental risks associated with the no-action alternative. The risk and impact characterization of the areas included in the quantitative Risk Assessment indicates that none of the areas pose unacceptable health risks or impacts, because of the installation's current caretaker status. However, based on future industrial use of the installation 12 areas may pose unacceptable human health risks and/or hazards. The future residential use scenario indicated 13 areas that may pose unacceptable human health risks and/or hazards due to the presence of site-related contaminants in one or all of the media sampled (soil, groundwater, surface water, and sediment). The ecological risk evaluation indicates that 14 of the areas may have adverse ecological effects under each of the three scenarios.

2.2 FEDERAL, STATE, AND LOCAL GOVERNMENT REGULATORY RECORDS

Information regarding permit and compliance status, enforcement actions, and the hazardous waste generator status of Alabama Army Ammunition Plant was obtained through on-site and telephone interviews, an electronic data base search, and record reviews at various Federal, State, and local regulatory agencies.

Record reviews and interviews were conducted at the Alabama Department of Environmental Management, the USEPA Region IV, and the local library. Federal and Army records made available by USAEC and the installation were also reviewed.

The electronic data base search of Federal and State records resulted in a Federal/State Data Report and Map containing information from the following data bases:

- ★ National Priorities List
- ★ Comprehensive Environmental Response Compensation, and Liability Information System
- ★ Toxic Release Inventory

- ★ Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facilities
- ★ Resource Conservation and Recovery Information System Large Quantity Generators
- ★ Resource Conservation and Recovery Information System Small Quantity Generators
- ★ Civil Enforcement Docket
- ★ Emergency Response Notifications System
- ★ Facility Index System
- ★ Nuclear Facilities
- ★ Open Dumps
- ★ State Registered Underground Storage Tanks
- ★ State Landfills.

The search encompassed the properties within a 2.75-mile radius from the center of the installation. A copy of the data base search results are included in Appendix B. A summary of relevant regulatory information obtained during the record review process is presented below.

2.2.1 Permits and Permit Applications

Alabama Army Ammunition Plant was deactivated in the late 1940's (prior to the passage of environmental regulations) therefore, no permits or permit applications were on file for the installation when it was active. The only activities that have occurred since the installation's deactivation are demolition and disposal activities.

2.2.2 Inspection Reports and Enforcement Actions

In 1980, a Notification of Hazardous Waste Activity was submitted to the USEPA in accordance with RCRA. A Notification of Hazardous Waste Site was submitted to USEPA in 1981. In 1983, an EPA Potential Hazardous Waste Site Identification and Preliminary Assessment recommended a site inspection. No further documents or reports were found in Government files except for the report for a site inspection, conducted by the U.S. Department of Health and Human Services on August 13, 1986. The site inspection was made by the Agency for Toxic Substances and Disease Registry to determine the potential health threat from the Alabama Army Ammunition Plant; the installation was placed on the National Priorities List in 1987. The Federal Facility Agreement, signed by the Army, USEPA, and the Alabama Department of Environmental Management became effective in March 1990.

2.3 INTERVIEWS

TETC conducted a site visit at Alabama Army Ammunition Plant on September 27 through 29, 1993, to collect information and interview individuals associated with the installation. TETC's team included Carol Frye.

Only one individual, Mr. Ron Wynn, was interviewed at the installation: he was the only individual remaining onsite. Acting as caretaker, he provides oversight during the ongoing

remediation efforts and closure activities. In addition, Carol Frye of TETC visited regulatory agencies in Alabama and Georgia, to obtain information not available at the installation. A complete list of the agencies visited or contacted and the people interviewed is provided in Table 2-2.

TABLE 2-2
LIST OF PERSONNEL INTERVIEWED, ALABAMA ARMY AMMUNITION PLANT, TALLADEGA COUNTY, ALABAMA

Reference	Name/Phone Number	Location	Dates of Employment	Job Position
a	Ron Wynn (205) 378-5531	Alabama Army Ammunition Plant	1971 - present	Caretaker/ Alabama Army Ammunition Plant Contact
b	C.H. Cox (205) 260-2785	Alabama Department of Environmental Management, Special Project Division	1990 - present	Environmental Engineer
c	Jim Barksdale (404) 347-3016	U.S. Environmental Protection Agency, Region IV	Interviewee declined to provide information	
d	Pat Denenny (205) 271-7913	Alabama Department of Environmental Management, Land Division	1992 - present	File Clerk
e	Sam McIntosh (205) 378-5541	Kimberly-Clark	Interviewee declined to provide information	Team Leader, Transportation and Planning

2.4 VISUAL INSPECTIONS

During the site visit, inspections were conducted throughout the installation and at adjacent properties. The purpose was to confirm findings reported in previous studies and information collected through interviews, as well as to identify new areas of concern. The visual inspection consisted of automobile drive-through and walk-through surveys of areas in which CERCLA-regulated and nonregulated substances may be stored, released, or disposed. During the visual inspection, contamination sources were noted and leaks, spills, and other evidence of releases were observed and quantified; no samples were collected.

2.4.1 Inspection of Alabama Army Ammunition Plant

Evidence was gathered regarding current or past contamination with the following substances:

Asbestos-containing materials: An asbestos survey was conducted in 1981 and reported in the Environmental Survey. The removal of asbestos-containing material was observed at buildings that were being demolished.

Lead-based paint: No records were available. An inventory of all buildings present at Alabama Army Ammunition Plant, along with the date of construction, was obtained. On the basis that any structure constructed prior to 1978 contained lead-based paint, it was concluded that lead-based paint is present in all remaining buildings on the installation.

Polychlorinated biphenyls: The Environmental Survey (July 1991) identified and sampled three potential PCB sites and found no indication of PCB contamination. The survey states that the transformer oil sampled from Building 220-C contained no detectable PCBs. In 1986, the Remedial Investigation identified additional sites where pole mounted transformers were located. These transformers were reported as being removed during the salvage operations. Downed utility poles were observed during the CERFA visual inspection in areas that did not appear to coincide with those identified in the previously mentioned documents. Twenty-nine (29) utility poles were recorded during the CERFA Site Inspection to have fallen or have blown down since deactivation of the installation, and the associated transformers have never been tested for the presence of PCBs. In some instances, the transformers attached to the poles broke on contact with the ground and their contents were released. During the visual inspection, black stained soil was observed at one of the downed utility poles, no vegetation was present.

Radon: A radon survey has never been conducted at Alabama Army Ammunition Plant. No mention of radon was noted in any of the documents.

Unexploded ordnance: Information obtained from previous studies is used to confirm that no activities involving unexploded ordnance occurred on BRAC property.

Radionuclides: According to the Installation Assessment (Appendix A, Reference 1), the Manhattan Project occupied a small portion of the installation from 1943 to 1945. Details of the operations are not available except that heavy water had been manufactured at the site. Of the five buildings that were associated with the Manhattan Project, only Building 2180 remains; it was empty during the CERFA Site Inspection. No radioactive residues were found during the radiation survey of 1991.

Petroleum release or disposal: There was no documentation available that addressed petroleum release or disposal.

Petroleum storage: No documentation was available regarding petroleum storage or underground storage tank management. According to the caretaker, all underground storage tanks were removed.

Hazardous substance release or disposal: Evidence of release was noted during the CERFA investigation. Utility poles had fallen onto the surface of the ground. Transformers were damaged, soil was stained, and all vegetation was dead in the immediate area. All the environmental documents address soil contamination within the Industrial Area B. Each of the

study areas contained some degree of soil contamination. Hazardous waste disposal was addressed in all the environmental investigations at the installations. There were no records of spill incidences because such occurrences would have taken place prior to reporting requirements. The Red Water Ditch carried industrial wastewater to treatment facilities located off the BRAC property as confirmed by the caretaker and as mentioned in the Remedial Investigation/Feasibility Study Reports. All the reports address wastewater discharges occurring throughout Alabama Army Ammunition Plant. Investigation of groundwater quality was addressed in the Environmental Survey and in each subsequent investigation. The Environmental Survey identified nitroaromatic residues in the water table aquifer underlying the industrial area.

Hazardous substance storage: Areas and buildings used to store pesticides and herbicides were identified by the caretaker and were also visually inspected. No records were available identifying hazardous substance storage areas.

2.4.2 Inspection of the Adjacent Property

The adjacent property was inspected visually. This included: to the north, a small industrial park and wooded area); to the east, former Area A, now a wildlife management and research site; to the south, the former leaseback area, now owned by Kimberly Clark Corporation; and to the west, undeveloped property bordering the Coosa River. Prior to the site visit, a data base search was performed for the area adjacent to Alabama Army Ammunition Plant within a 2.75-mile radius to identify small- and large-quantity waste generators, underground storage tanks, and leaking underground storage tanks. Both Federal and State data bases were searched (see Section 2.2 of this report). Information obtained from the search was verified through visual inspections. Possible areas of environmental concern were visually inspected to determine their potential for contamination.

2.5 TITLE DOCUMENTS

TETC conducted a review of tract maps and transfer documents to identify the former property owners of BRAC property at the time of its transfer to the Army. The purpose of this review was to determine the property's prior use and environmental condition at the time of its transfer. This review did not result in additional information. Previous ownership and the dates of transfer to the Army are indicated on Figure 5-2.

2.6 NEWSPAPER ARTICLES AND MEDICAL RECORDS

A search of Alabama Army Ammunition Plant, USEPA, and State records did not reveal any newspaper articles or medical/biohazardous waste records that are relevant to CERFA requirements.

3.0 PROPERTY BACKGROUND INFORMATION

This section presents an overview of past and current operations at Alabama Army Ammunition Plant and a discussion of environmental changes associated with the installation. It addresses activities relevant to waste management practices and significant environmental incidents that occurred since the Supplemental Remedial Investigation/Feasibility Study was conducted.

3.1 GENERAL BACKGROUND

The mission of Alabama Army Ammunition Plant, originally known as the Alabama Ordnance Works, was to manufacture explosives. The plant was established in 1941 on 13,233 acres of land. Production activities began in 1942 and continued until August 1945 when the Alabama Army Ammunition Plant was placed on stand-by status. Operations machinery, equipment, buildings, and ground areas were decontaminated over a five-month period following termination of operations. That was followed by a complete physical inventory, and the contractor was released in September 1946.

In April 1955, rehabilitation of three nitrocellulose lines, three trinitrotoluene lines, and one dinitrotoluene line began. In October 1957, the rehabilitation project was stopped with 75 percent of the project complete. The installation was again assigned stand-by status until the early 1970's. In 1973, the Alabama Army Ammunition Plant was declared in excess of Army needs.

Area A was auctioned on May 10, 1990, and was conveyed to the new owners on August 31, 1990. Area B currently covers 2,187 acres that contain 65 buildings and/or steel frames and concrete foundations. These are all scheduled for removal except for Building 802A, which is used as an office.

At present, 13 miles of railroad track have been leased to the CSX Railroad by the Army. The Army still controls the track on the property it once owned, which extends 15 feet from the middle of the track to either side.

3.1.1 Past Activities

Past activities at Alabama Army Ammunition Plant were related to manufacturing operations, disposal of waste, pesticide use, demolition, and industrial sewage.

Manufacturing Operations: The plant produced nitrocellulose, single-based smokeless powder, trinitrotoluene, dinitrotoluene, tetryl, sulfuric acid, aniline, N,N-dimethylaniline, and diphenylamine. The spent acids were recycled. All other wastes were disposed of on the property. Although most of the buildings were removed, most of the underground lines are intact. Underground process lines (fabricated out of a variety of materials including steel

wrapped wood pipe, terra cotta, and concrete) still remain in the trinitrotoluene, tetryl, and acid manufacturing areas. These lines were flushed during the shutdown period.

Disposal Sites: Numerous locations throughout the Alabama Army Ammunition Plant were used for the disposal of industrial waste and other debris from manufacturing processes.

- ★ The burning ground was used between 1941 and 1978 to burn dunnage, inert materials, and rejected explosive waste. The ashes and residue were buried and covered with soil in trenches near the burning area.
- ★ The red water basin was used to store red water wastes and other liquid waste from both trinitrotoluene manufacturing areas.
- ★ A sulfur burning pit was located in the acid manufacturing area.
- ★ The unlined sludge basin received aniline and other organic sludge material produced during the manufacture of tetryl.
- ★ All liquid industrial waste drained into open ditches, or through underground drainage pipes that terminated in open ditches, before entering the Coosa River.
- ★ The 812 series of buildings were designated as disposal areas where contractors stored rubble and noncontaminated material.
- ★ The basement of former Building 2140 was designated for the storage of waste asbestos-containing material.

Pesticide Use: Records on the quantities of pesticides, herbicides, and fertilizers stored and used at Alabama Army Ammunition Plant were not available, although it was reported that these substances were used throughout the installation's operation to control insects and vegetation. Quantities of 2,4-dinitrotoluene were reportedly used around railroad tracks, culverts, fences, and ditches to control weed growth. Chlordane and DDT were used to control insects.

Demolition Activities: During the 1960's and 1970's, demolition activities consisted of a controlled burning program. Buildings were flashed and torn down; no foundations or underground lines were removed. Asbestos and Transite residues were released to the surrounding surface soil in the course of the demolition activities. Lead flooring was removed and some dissemination occurred when the buildings burned.

Industrial Sewer System: Approximately 31,000 linear feet of industrial sewer lines are located within the combined trinitrotoluene manufacturing areas, the acid/organic manufacturing area, and the tetryl manufacturing area. These sewer lines carried liquid wastes from the manufacturing areas and discharged the wastes into the Red Water Basin, the Red Water Ditch, and the Coosa River.

3.1.2 Current Activities

At present, no industrial activity occurs at the Alabama Army Ammunition Plant. The Army continues to contract the property out to logging companies. The caretaker estimated that logging activities occur once a year. Remedial activities are on-going and include remediation of the stockpile soils. Demolition activities are also on-going and generate large volumes of waste building materials. Prior to 1982, waste generated by demolition activities were left on-site. Asbestos is now removed from the buildings and overhead steam lines prior to demolition and is disposed of by a licensed contractor (according to the Caretaker).

3.2 Environmental Changes at Alabama Army Ammunition Plant

There have been minor changes in the installation boundaries or activities at the Alabama Army Ammunition Plant since the Supplemental Remedial Investigation/Feasibility Study of 1990. In February 1990 a tornado destroyed the stockpile soil storage building, Building TC4A, which stored contaminated soils from Area A. The remaining soils were added to existing stockpiles at TC4B, a membrane-covered concrete pad. No other details were available concerning the fate of the contaminated soil in Building TC4A. On October 7, 1993 a fire destroyed Building 708A and damaged (adjacent) Building 703A. At the time of the CERFA investigation, both these buildings were scheduled for demolition.

4.0 INVESTIGATION RESULTS

This section describes the results of the CERFA investigation. The first part describes all areas within BRAC property that have been addressed in reports prior to the CERFA investigation, and the second part describes all areas within BRAC property that have not been addressed in previous reports. The third part identifies adjacent properties that may be potential sources of contamination. The fourth part describes areas containing items not regulated by CERCLA, and the fifth part describes areas where remediation has occurred. Part six describes real property within BRAC property that will be retained by the Army.

4.1 PREVIOUSLY IDENTIFIED AREAS REQUIRING ENVIRONMENTAL EVALUATIONS

This part describes both existing areas requiring environmental evaluations and those that have undergone change.

4.1.1 Existing Areas Requiring Environmental Evaluations

Table 4-1 lists all areas within the BRAC property addressed in the Installation Assessment, Environmental Survey, Remedial Investigation, and Supplemental Remedial Investigation for Alabama Army Ammunition Plant. The Installation Assessment identified sources of contamination (i.e., locations of storage or release of hazardous substances) through document review and a site visit. The Environmental Survey, Remedial Investigation, and Supplemental Remedial Investigation identified the magnitude and extent of contamination through sampling and analysis activities. The risk identified in the "Risk" column in Table 4-1 is any risk above 1E-06 for any exposure pathway. Below is a brief description of each of the areas requiring environmental evaluation:

Study Area 2 - Smokeless Power Facility: Most of the smokeless powder facility is located in the leaseback area. The most northern section of this area is located in the BRAC property. The Installation Assessment states employees reported that packages of smokeless powder pellets were loaded into fiber boxes for transport. Pellets often spilled during these operations, and they were observed on the ground surface.

Environmental survey sampling activities identified the following: levels of zinc and mercury just above background levels in groundwater; 2,4-dinitrotoluene in sediment samples; and dinitrololuene residues in soil samples. Asbestos contamination was found to be minimal.

The confirmatory survey concluded that no further investigation of the study area was necessary because the extent of any contamination was sufficiently defined so that decontamination and salvage could be successfully accomplished and release action taken. The Remedial Investigation reported that the buildings were decontaminated and burned, the equipment decontaminated and salvaged, and the area has been transferred back to Kimberly Clark.

TABLE 4-1
PREVIOUSLY IDENTIFIED AREAS REQUIRING ENVIRONMENTAL EVALUATION IN BRAC PROPERTY, ALABAMA ARMY AMMUNITION PLANT, ALABAMA

Name	Coordinate Location (x,y) Figure 5-1	Parcel Number	Source of Information					Baseline Risk Assessment (1992) (Noncarcinogenic: Hazard Index ≥ 1 or Carcinogenic Risk > 1E-06)
			Installation Assessment (1978)	Environmental Survey (1981)	Confirmatory Survey (1983)	Remedial Investigation (1986)	Supplemental Remedial Investigation (1990)	
Smokeless Power Facility (Study Area 2)	(29,12)	12D	✓	✓	✓			No Risk Assessment conducted
Sanitary Landfill and Lead Facility (Study Area 3)	(31,20)	2D	✓	✓	✓	✓	✓	Yes
Manhattan Project Area (Study Area 4)	(28,30)	5D	✓	✓	✓	✓	✓	Yes
Red-Water Storage Basin (Study Area 5)	(34,25)	2D	✓	✓	✓		✓	Yes
Southern Trinitrotoluene Manufacturing Area (Study Area 6)	(46,26)	2D	✓	✓	✓	✓	✓	Yes
Northern Trinitrotoluene Manufacturing Area (Study Area 7)	(48,35)	2D	✓	✓	✓	✓	✓	Yes
Acid/Organic Manufacturing Area (Study Area 8)	(51,43)	2D	✓	✓	✓	✓	✓	Yes
Aniline Sludge Basin (Study Area 9)	(57,44)	2D	✓	✓	✓	✓	✓	No
Tetryl Manufacturing Area (Study Area 10)	(64,49)	2D	✓	✓	✓	✓	✓	Yes
Flashing Ground (Study Area 16)	(80,9)	15D	✓	✓	✓	✓	✓	Yes
Propellant Shipping Area (Study Area 17)	(66,27)	6D	✓	✓	✓		✓	No
Blending Tower Area (Study Area 18)	(57,10)	6D	✓	✓	✓		✓	No
Lead Facility (Study Area 19)	(82,10)	15D	✓	✓	✓	✓	✓	No Risk Assessment conducted
Rifle Powder Finishing Area (Study Area 20)	(45,11)	10D		✓	✓		✓	No
Red-Water Ditch (Study Area 21)	(19,20)	2D		✓	✓	✓	✓	Yes
Demolition Landfill (Study Area 22)	(91,19)	9D			✓	✓	✓	Yes
Storage Battery/Demolition Debris (Study Area 25)	(31,14)	12D				✓		Yes
Crossover Ditch (Study Area 26)	(17,28)	2D		✓	✓	✓	✓	No
Beaver Pond Drainage System (Study Area 27)	(45,30)	2D		✓	✓	✓	✓	No
Industrial Sewer System	Not Mapped	Not Mapped			✓	✓		No Risk Assessment conducted
TC4A & B	(46,44)	2D			✓			No Risk Assessment conducted

Key: Yes = Human health carcinogenic or noncarcinogenic risk were found to exist above 1E-06 and 1, respectively.
No = Human health carcinogenic or noncarcinogenic risk not found to exist above 1E-06 and 1, respectively.

Note: Figure 5-1 is located at the end of Section 5.

According to the caretaker, the portion of Study Area 2 that still remains in the BRAC property has not been remediated. It appears that soil contamination is present in the area.

Study Area 3 - Sanitary Landfill and Lead Facility: The sanitary landfill was located in the west-central portion of the industrial area. According to the Environmental Survey (Appendix A, Reference 2), most of the fill material was domestic solid waste and building rubble. The only industrial, chemical, or reactive wastes disposed of in this landfill were limited quantities of material contaminated with explosives. The landfill has been in use from the beginning of World War II operations until at least the late 1970's.

Environmental Survey activities included the collection and analysis of 7 soil samples. Two samples were contaminated with lead. Of the four samples analyzed for mercury, two had low levels. Only one soil sample had detectable concentrations of trinitrotoluene, nitrobenzene, and 1,3,5-trinitrobenzene. Three samples contained nitroaromatic residues. Asbestos materials were also evident in these samples. One groundwater monitoring well was installed, and analysis of samples showed no detectable concentrations of contaminants of concern. The area was visually inspected for asbestos; both friable and Transite asbestos materials were found to be mixed in the landfill soil. Asbestos contamination is estimated to cover 11,000 square meters and to occupy a volume of 16,500 cubic meters within the landfill.

Based on the findings of the Environmental Survey, the Confirmatory Survey concluded that the extent of contamination and its migration potential had been adequately defined for the Sanitary Landfill and Lead Facility and therefore was not included in the Confirmatory Survey.

Installation of one groundwater monitoring well was included as part of the Remedial Investigation. Two groundwater samples were collected, one from the new well and one from the previously installed well. No nitroaromatics or lead were detected in either well. Five soil samples were collected and analyzed. One sample contained a low level of extractable lead.

Study Area 4 - Manhattan Project Area: Located in the western parcel of the General Services Administration area, the Manhattan Project used a small part of the Alabama Army Ammunition Plant from 1943 to 1945. Details of the operations were not available at the installation, however, further investigation revealed that heavy water had been manufactured at the site. According to a letter from a staff member at Formerly Utilized Sites Remedial Action Program to the Department of the Army, dated October 1989, an investigative records search was completed in October 1985 to determine the potential for radioactive contamination at the site. The letter states that the installation was designed to produce 1,600 pounds of heavy water per month, but records indicate that it produced under 600 pounds per month. A total of 11,160 pounds of heavy water were produced from January 1944 through July 1945. Storage tanks were formerly located at the site. In 1945/46 all buildings were removed except for one small brick building, which still remains. No records were found to describe site closeout activities. No information was available concerning any chemical use at this site.

Environmental Survey activities included installation of one groundwater monitoring well located near the middle of the study area. Groundwater sampling did not reveal nitroaromatic compounds. In two soil samples, a significant concentration of lead was found. A visual

inspection and walkover of the area revealed only Transite materials, which were widely scattered over a surface area of approximately 3,700 square meters.

Based on the findings of the Environmental Survey, it was concluded that the contamination in the Manhattan Project Area was sufficiently defined; therefore, this study area was not evaluated further in the Confirmatory Assessment or the Remedial Investigation.

Study Area 5 - Red-Water Storage Basin: The Red-Water Storage Basin was intended to be used as a settling basin for trinitrotoluene manufacturing process wastewaters. It was constructed on the northern side of the Red-Water Ditch, several hundred meters to the west of the southern trinitrotoluene manufacturing area. The basin covered an area of 395,000 square feet and was surrounded by a 6-foot earth berm. The dike and the basin floor were made of clay. An entry pipe was located at the southeast corner and an exit flume was located in the southwest corner. Only the flume still exists. The basin contains some water during even the driest periods of the year.

Environmental Survey activities included installation of three groundwater monitoring wells. Three groundwater samples were taken; one of them was contaminated with trace levels of 2,4-dinitrotoluene, 2,6-dinitrotoluene, and trinitrotoluene. Surface water samples showed no concentrations of any contaminants. Of the seven sediment samples analyzed, only those in the immediate area of the waste inlet were contaminated with trinitrotoluene and sulfate.

One groundwater monitoring well was installed in the Confirmatory Survey. Samples were taken of groundwater from this well and the previously installed well (which had showed trace levels of nitroaromatics). No contaminants were detected in either of the wells.

Based on the findings of the Environmental Survey and the Confirmatory Survey, the Remedial Investigation concluded that the extent of contamination and contaminant migration potential had been adequately defined for the Red-Water Storage Basin; therefore, it was not included in the Remedial Investigation.

Study Area 6 - Southern Trinitrotoluene Manufacturing Area: Study Area 6 was the new dinitrotoluene and trinitrotoluene manufacturing area. Ditches are present where wooden flumes formerly carried wastes to the industrial sewers. The production lines in this area were extensively bulldozed during demolition. All that remains as evidence of the former structures are the roadways and portions of building foundations. Any contaminated soil, initially situated adjacent to certain buildings, must therefore be assumed to have been dispersed throughout the area in a random pattern.

Environmental Survey sampling activities included installation of two groundwater monitoring wells. One of the wells was found to contain a significantly high level of nitrite and nitrate, indicative of contamination of this aquifer by wastes from nitric acid production and nitration operations. This same well contained concentrations of nitrobenzene, 2,4-dinitrotoluene, 2,6-dinitrotoluene,1,3-dinitrobenzene,2,4,6-trinitrotoluene,1,3,5-trinitrobenzene,2,4-dinitrophenol, and 2-methy-4,6-dinitrophenol. Of 12 soil samples taken, nitroaromatic residues were detected in 11 of them. Five of the eight samples from the production line contained trinitrotoluene; 2,4-

dinitrotoluene and 1,3,5-trinitrobenzene were each detected at separate sampling locations. Soil samples, consisting of spoil dredged from the Red-Water Ditch sediments deposited on the edge of the drainway during the 1953-1954 renovation, were highly contaminated with trinitrotoluene. 2,4-dinitrotoluene and 2,6-dinitrotoluene were also detected. A walk-through survey was made to observe the extent of soil contamination by asbestos. Most of the Transite-containing rubble from building demolition is located around or near the building foundations. All open areas have been thoroughly bulldozed, scattering Transite materials throughout an estimated 69,000 square meters. Friable asbestos was difficult to locate due to the extent of destruction; however, it was found in large pieces along the pipelines in areas where bulldozing would be difficult. Due to the amount of destruction, it is likely that virtually all of the friable asbestos is now mixed into the soil.

Three groundwater monitoring wells and one piezometer cluster were installed as part of the Confirmatory Survey. Sampling results from the three new wells and the two previously installed wells showed concentrations of 2,4,6-trinitrotoluene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, nitrobenzene, 1,3-dinitrobenzene, and 1,3,5-trinitrobenzene. Following this sampling round, a total of 18 wells and 2 piezometer clusters were installed around the perimeter of the southern and northern trinitrotoluene manufacturing areas to better define the groundwater hydrology and extent of contamination in this area. Three soil cores were collected, and results found 2,4,6-trinitrotoluene, 2,4-dinitrotoluene, and 2,6-dinitrotoluene present in varying concentrations.

As part of the Remedial Investigation, five soil samples were collected and analyzed for extractable lead. The results were below the detection limit for all five samples. Four groundwater samples were collected from existing wells and analyzed for six nitroaromatic compounds. In only one of the wells was the level of all compounds below the detection limit.

Results of the Supplemental Remedial Investigation field sampling activities for the northern and southern trinitrotoluene manufacturing areas are combined. The Supplemental Remedial Investigation activities included installation of seven groundwater monitoring wells. Groundwater samples were collected from the seven new wells and from previously installed wells. Nitroaromatic contaminants were detected in 3 of the 10 wells sampled.

Nitroaromatic contamination exists in the water table aquifer beneath the study area. In many instances, applicable water quality criteria were exceeded. The concentrations of nitroaromatics that may reach the Coosa River through subsurface migration from the study area are not predicted to exceed the applicable water quality criteria, even at the lowest daily river flow of the 64-year period of record. The Confirmatory Survey indicated that a relatively impermeable single aquifer system is present in the subsurface of the study area. According to results from the Supplemental Remedial Investigation, contaminant migration does not appear to be occurring in the shallow and deep aquifers of the study area.

As a result of explosives manufacturing activities and the subsequent demolition of Alabama Army Ammunition Plant, the spoil banks, soils, and sediments of the study area contain nitroaromatic residues. The concentrations of nitroaromatics observed in the soils are all well below the maximum levels allowable for industrial use. In areas in which the groundwater is

contaminated, however, these soils are the major source of contamination. The soils were found to be nonreactive.

Study Area 7 - Northern Trinitrotoluene Manufacturing Area: Industrial activities in this area (known as the old trinitrotoluene manufacturing area), produced 2,4,6-trinitrotoluene and 2,4-dinitrotoluene. The area consisted of four 2,4,6-trinitrotoluene production lines and one dinitrotoluene production line. Red water from this area was also dumped into the open Red Water Ditch. Ditches indicate the locations where wooden flumes formerly carried wastes to the industrial sewers. Like the southern trinitrotoluene manufacturing area, this production area has been completely razed. Material was spread over a wide area during the demolition; only foundations and portions of the sewer system remain.

Environmental Survey activities included collection and analysis of 10 soil samples. The results showed that all of the samples contained nitroaromatic compounds. 2,4-dinitrotoluene was detected in the surface soils of the dinitrotoluene production area. Sampling results from one of two groundwater monitoring wells showed a significantly high level of trinitrotoluene and dinitrotoluene, and detectable concentrations of 2,4-dinitrotoluene, 2,6-dinitrotoluene, and 2,4,6-trinitrotoluene A walk-through survey was conducted to observe the extent of soil contamination by asbestos. Most of the Transite-containing rubble from building demolition is located around or near the building foundations. All open areas have been thoroughly bulldozed, scattering Transite materials throughout these areas (an estimated 69,000 square meters). Friable asbestos was difficult to locate due to the extent of destruction; however, it was found in large pieces along the pipelines in areas where bulldozing would be difficult. Considering the amount of destruction, it is likely that virtually all of the friable asbestos is now mixed into the soil.

Two groundwater monitoring wells were installed as part of the Confirmatory Survey, and 2,4,6-trinitrotoluene and 2,6-dinitrotoluene were detected in the groundwater samples. Five soil cores were collected and analyzed. Various levels of 2,4,6-trinitrotoluene, 2,4-dinitrotoluene, and 2,6-dinitrotoluene were present in the cores.

The Remedial Investigation activities included collection and analysis of soil samples to determine the level of extractable lead. Of the five samples, levels in one sample were below the detection limit while the remaining five had concentrations well below the established extraction procedure toxicity criterion. Three groundwater samples were collected from the existing wells and analyzed; all contained detectable concentrations of all six nitroaromatic compounds.

Nitroaromatic contamination exists in the water table aquifer beneath the study area. In many instances, applicable water quality criteria are exceeded. The concentrations of nitroaromatics that may reach the Coosa River through subsurface migration from the study area are not expected to exceed the applicable water quality criteria even at the lowest daily river flow of the 64-year period of record. The Confirmatory Survey states that a relatively impermeable single aquifer system is present below the surface of the study site. According to the results of the Supplemental Remedial Investigation, contaminant migration does not appear to be occurring in the shallow and deep aquifers under the study area.

Study Area 8 - Acid/Organic Manufacturing Area: In the acid/organic manufacturing area, nitrobenzene was made and reduced to form aniline, N-,N-dimethylaniline, and diphenylamine. Concentrated nitric acid, oleum (fuming sulfuric acid), and sodium sulfite (sellite) were also produced. Included in this area is a former sulphur burning pit that could contain residual sulfur. The buildings have been completely razed, and rubble has been spread over the entire acid and sellite areas.

Environmental Survey activities included the collection and analysis of six soil samples. Nitrobenzene was detected at Building 904-A. One sample contained a significant concentration of lead. Two groundwater monitoring wells were installed, and one of them was found to contain a significantly high level of nitrite and nitrate, indicative of contamination of this aquifer by wastes from nitric acid production and nitration operations. No detectable nitroaromatic residues or organic bases were detected. A walk-through survey was conducted to observe the extent of soil contamination by asbestos. Extensive bulldozing resulted in the mixing of both Transite and friable asbestos with the soils, covering an estimated 165,000 square meters. Particles of sulfur up to 3 cubic meters in diameter were abundant on the soil surface in the sulfur storage area. The area contaminated by sulfur and acid wastes covers approximately 150 square meters.

On the basis of the findings of the Environmental Survey, the Confirmatory Survey concluded that the extent of contamination and contaminant migration potential had been adequately defined for the acid/organic manufacturing area and therefore was not included in the Confirmatory Survey.

Five soil samples were collected during the Remedial Investigation. No detectable concentrations of lead were found in any of the samples.

As part of the Supplemental Remedial Investigation, one downgradient monitoring well was sampled. Neither nitroaromatic compounds nor tetryl were detected in this sample.

The study area was sufficiently defined by the Environmental Survey and therefore was not addressed in the Confirmatory Survey. The Remedial Investigation concluded that no significant contaminant migration occurs in the surface or ground waters as a result of past industrial activities at the study area.

Study Area 9 - Aniline Sludge Basin: The sludge basin, with an area of 1,463 square feet, was unlined and constructed of clay dikes and a clay bottom. Liquid wastes and sludges from the production of aniline in the acid/organic manufacturing area were deposited in the basin. Ash from the northern power plant may also have been disposed of in the basin. There is an industrial outfall, but no exit, on the western side of the basin. Although the pond contains water year-round, it becomes shallow during the dry season. The bottom of the basin is now covered with a very fine, black silt that varies from 5 to 10 cubic meters in depth. An area approximately 150 meters by 15 meters in the southern end of the basin is underlain by bituminous material.

The Environmental Survey activities included installation of four groundwater monitoring wells. Sampling results from one of the wells showed a significantly high level of trinitrotoluene and dinitrotoluene. The second well contained 2,4-dinitrotoluene just above the minimum detectable concentration. Concentrations of trinitrotoluene, 1,3-dinitrobenzene, and 1,3,5-trinitrobenzene were found at one sediment sampling location where a waste-water line from the acids area entered the basin. Two sediment samples revealed the presence of cadmium, nickel, chromium, copper, and zinc. Surface water sampling revealed no concentrations of contaminants.

One groundwater monitoring well was installed as part of the Confirmatory Survey. Groundwater samples were collected and analyzed from this well and the previously installed well where concentrations of nitroaromatics were found. No detectable nitroaromatic residues were found in either sample.

One groundwater sample was scheduled to be collected from a monitoring well during the Remedial Investigation. Due to low water-table conditions, this was not possible. No further work was done at this site as part of the Remedial Investigation.

Study Area 10 - Tetryl Manufacturing Area: The Tetryl Manufacturing Area consisted of 12 manufacturing lines, where tetryl was produced in a 2-step process by first sulfonating N-N-dimethylaniline and then nitrating the resulting intermediate. Extensive amounts of lead were used in the piping, floors, and fittings of the four nitration houses. Lead scrap as well as melted chucks of lead were abundant in the soil adjacent to most of the nitrating houses in the area. The buildings have been razed and rubble spread over areas about 25 meters on either side of the manufacturing lines. All that remains of each line are the concrete foundations of the buildings and the concrete wheeling walk that linked the four nitration houses. During the 1978 assessment, team members recovered explosive material from the soil surface.

Environmental Survey activities included the collection and analysis of seven soil samples. A high lead content was found in a sample taken near the tetryl refining house. Tetryl was found in low concentrations at the north tetryl nailing house and at high concentrations in the soils around the two drying and finishing houses. Two groundwater monitoring wells were installed. Sampling results for one well indicated the presence of diphenylamine, and tetryl was detected in the second well. A walk-through survey was conducted to observe the extent of soil contamination by asbestos. Extensive bulldozing scattered both types of asbestos-containing materials over an area covering approximately 176,000 square meters.

Two additional groundwater monitoring wells were installed for the Confirmatory Survey. Groundwater sampling results found a trace level of tetryl in one of the wells.

Five soil samples were collected as part of the Remedial Investigation. Lead concentrations were below the detection limit in all five samples. Two groundwater samples were collected; the results showed no nitroaromatics present above the detection limit.

As part of the Supplemental Remedial Investigation, one downgradient monitoring well was sampled. Nitroaromatic compounds and tetryl were detected in this sample.

Study Area 16 - Flashing Ground: The Flashing Ground consists of trenches that were active after World War II. According to the Installation Assessment (Appendix A, Reference 1), combustible trash and explosive materials were burned in this area.

Environmental Survey activities included the collection and analysis of 13 soil samples. Analytical results revealed the presence of lead, nitrocellulose, trinitrotoluene, dinitrotoluene, trinitrobenzene, and tetryl in all but one of the samples. Four groundwater monitoring wells were installed. Trace amounts of 2,4-dinitrotoluene were found in one water sample. A walk-through survey was conducted to observe the extent of soil contamination by asbestos. Transite asbestos was found around the building that was located just inside the entry to the Flashing Ground. Small quantities of Transite materials were found along the burial pits on the western side of the area. No friable asbestos materials were found. Asbestos contamination is estimated to cover 55,000 square meters, with an estimated volume of 55,000 cubic meters.

Confirmatory Survey field sampling activity consisted of the installation of one groundwater monitoring well. Trace amounts of 2,4-dinitrotoluene were found in samples from this well and the previously installed well. No residues were detected in either of the two groundwater samples.

Soil sampling was conducted as part of the Remedial Investigation. Analytical results found a concentration of lead greater than the extraction procedure toxicity criteria. Of the three groundwater samples planned, only one was collected due to a slow recharge rate. The results for the one sample showed a concentration of 2,4,6-trinitrotoluene.

Supplemental Remedial Investigation activities included installation of eight additional groundwater monitoring wells. Groundwater samples were collected from the eight new wells and from two existing wells. Nitroaromatic compounds were detected in 2 of the 10 water samples and concentrations of dissolved lead were detected in all but two of the wells sampled.

The Remedial Investigation concluded that no significant contaminant migration occurs along surface or ground waters as a result of past industrial activities in the study area. According to the results of the Supplemental Remedial Investigation, the deep aquifer exhibits no contamination, and contamination in the shallow aquifer is confined to one corner and is not migrating significantly.

Study Area 17 - Propellant Shipping Area: This site was originally identified in the 1978 Records Search as an old farm well located in the southern portion of the Alabama Army Ammunition Plant that dated back before the land was acquired. It was reported that the well was used only to dispose of inert material. As of the 1981 Environmental Survey, this area was identified as the propellant shipping area, located in the General Services Administration study area. The shipping houses (Series 229 Buildings), used to store smokeless propellant prior to shipment, totalled 48 buildings. Thirteen of the 48 shipping buildings are located on land previously sold. Contamination occurred from sweeping debris from the floor of the buildings onto the ground surface and by spills and breaks during the storage and shipping process.

Environmental Survey activities included the installation of one groundwater monitoring well. No concentrations of nitroaromatics were detected in the groundwater sample. Soil sampling results revealed that only one building had a concentration of 2,4-dinitrotoluene above the detection limit and a low incidence of dinitrotoluene and nitrocellulose. A walk-through survey was conducted to observe the extent of soil contamination by asbestos. All buildings in this area are covered with Transite shingles or panels. Because the buildings were not heated, no steam lines were present in this area. No friable asbestos was found. All 35 buildings within the present Alabama Army Ammunition Plant boundary were inspected and spot tested for the presence of nitrocellulose. Selected samples were collected and spot tests conducted for nitroaromatic residues. Eighty-four percent of the spot tests were positive for nitrocellulose but were below the reportable detection limit. Only one spot test for nitroaromatic compounds was positive, revealing a trace level of dinitrotoluene at Shipping House 229-18.

Based on the findings of the Environmental Survey, the Confirmatory Survey and Remedial Investigation concluded that the contamination in the propellant shipping area was sufficiently defined; therefore, this study area was not evaluated in these reports.

Study Area 18 - Blending Tower Area: This site was originally identified in the 1978 record search as five unlined settling basins. The record search revealed three of the five basins were used by the Beaunit Mills Company. Beaunit Mills Company leased Army property for the purpose of producing rayon fabric. In the process of making the fabric, acid, cellulose and organic materials were generated. The acid, cellulose and organic wastes generated from the process was disposed of in three out of the five settling basins. The settling basins were designed and installed by the Army, however, they were never used by the Army. As of the 1981 Environmental Survey, the site was identified as the blending tower area.

The Environmental Survey activities consisted of an asbestos survey and soil sampling. Analysis of the soil sampling did not reveal nitroaromatic or organic base residues. The Confirmatory Survey and Remedial Investigation concluded that the contamination in the blending tower area was sufficiently defined; therefore, this study area was not evaluated in these reports. The Army has initiated action to investigate this site as part of the Inclusive Remedial Investigation/Feasibility Study to begin summer 1994. To better characterize this site monitoring wells and surface soil sampling will be taken.

During the walk-through asbestos survey, Transite asbestos was found around the foundations of destroyed buildings. Bulldozing of the buildings scattered the Transite materials over an estimated 21,000 square meters. No friable asbestos was found.

Study Area 19 - Lead Facility: The old lead facility was used during the production years for pouring lead ingots. At the time of the Environmental Survey (Appendix A, Reference 9), numerous large pieces of lead, some weighing several kilograms, remained on the soil surface in this area and were thrown outside the flashing ground fence. Sparse vegetation was observed, possibly caused by soil contamination. Environmental Survey activities included the collection and analysis of five soil samples, which were found to contain significantly high levels of lead. A walk-through survey was conducted to observe the extent of soil contamination by asbestos. This area did not contain any Transite or friable asbestos.

Based on the findings of the Environmental Survey, the Confirmatory Survey concluded that the extent of contamination and its migration potential had been adequately defined for the lead facility; therefore, it was not included in the Confirmatory Survey.

Soil sampling was conducted as part of the Remedial Investigation. Analytical results for the samples were above the established extraction procedure toxicity criterion for lead.

Study Area 20 - Rifle Powder Finishing Area: No background history was available for the rifle powder finishing area. Environmental Survey activities included a walk-through asbestos survey and soil sampling. Of the nine soil samples analyzed, six contained significant concentrations of 2,4-dinitrotoluene. The asbestos survey found Transite asbestos around all building foundations and scattered throughout the area, covering an estimated 120,000 square meters. Friable asbestos was found along all former steam line routes.

Based on the findings of the Environmental Survey, the Confirmatory Survey and Remedial Investigation concluded that the contamination in the rifle powder finishing area was sufficiently defined; therefore, this study area was not evaluated in these reports. The Remedial Investigation concluded that no significant contaminant migration occurs in the surface or ground waters as a result of past industrial activities.

Study Area 21 - Red-Water Ditch: The Red-Water Ditch was the open industrial sewer that carried the industrial process wastewaters produced by the manufacture of trinitrotoluene. The Red-Water Ditch also collected industrial process wastes and surface runoff from the acid/organic manufacturing area (Study Area 8) and the tetryl manufacturing area (Study Area 10). As initially constructed, the Ditch extended from the western side of the tetryl manufacturing area through the southern trinitrotoluene manufacturing area (Study Area 6), and the northern trinitrotoluene manufacturing Area (Study Area 7). Industrial wastes generated in the Acid/Organic Manufacturing Area were discharged into the ditch immediately east of Building 806C (northern manufacturing area). The areas drained by the Red-Water Ditch were involved in the production of acids (sulfuric and nitric), organics (diphenylaniline, aniline, and N,N-dimethylaniline), and explosives and their process byproducts (trinitrotoluene, dinitrotoluene, and tetryl). Other organics and inorganics (benzene, toluene, sodium sulfite, and elemental sulfur) were also stored in these areas.

The Red-Water Ditch contains flowing water only during wet periods. During dry periods, the ditch contains water in only a few scattered locations. The Red-Water Ditch was constructed with steep sides and has a depth that varies from approximately 1 to 3 meters. The ditch was cleaned at least once since its original construction. Sediments dredged from the ditch during the cleaning operations were deposited along the ditch. When intersecting other drainage systems, the Red-Water Ditch crosses the other systems through vitrified pipes. The Red-Water Ditch drainage system carries approximately 17 percent of the surface water at Alabama Army Ammunition Plant, which is ultimately discharged into the Coosa River.

The Environmental Survey conducted sampling activities along the Red-Water Drainage Ditch System. The survey concluded that the waters were contaminated by low levels of nitroaromatic compounds where the ditch traverses the southern and northern trinitrotoluene manufacturing

areas and by diphenylamine immediately downstream of the outfall that discharges from the acid/organic manufacturing area. In addition, inorganic contamination (lead, nitrate, and sulfate) was present in two sampling locations. Waters in the middle section of the Red-Water Ditch were contaminated by low levels of 2,4-dinitrotoluene, 2,6-dinitrotoluene, and trinitrotoluene. Diphenylamine was detected immediately downstream from the main acid/organic manufacturing area discharge point. Asbestos fibers were also found in the surface water. The sediments from the northern trinitrotoluene manufacturing area to the crossover point are contaminated by trinitrotoluene, as are the sewers and soils adjacent to the ditch in the southern and northern trinitrotoluene manufacturing areas.

Based on the findings of the Environmental Survey, the Confirmatory Survey concluded that the extent of contamination and contaminant migration potential had been adequately defined for the Red-Water Ditch; therefore, it was not included in the Confirmatory Survey.

Sediment and soil samples were conducted as part of the Remedial Investigation. Low concentrations of 2,4,6-dinitrotoluene were found in two of the three sediment samples. Soil sample analytical results showed 2,4,6-dinitrotoluene in all five samples and extractable lead in two of the three samples analyzed for this contaminant. Although plans were made to collect and analyze one surface water sample, this was not possible due to dry conditions.

During the Supplemental Remedial Investigation, four surface water samples and four sediment samples were analyzed. No nitroaromatic compounds or tetryl concentrations were found in any of these samples. According to the Remedial Investigation the drainage system is contaminated with nitroaromatic compounds. However, these sediments have been buried by channel wall erosion and sedimentation and do not contribute to surface water contamination. Low levels of nitroaromatic compounds were detected in the upstream surface waters of the Red-Water Ditch during the Environmental Survey. Runoff from the spoil piles and occasional discharge from contaminated sewer lines are identified as the source of the low levels of nitroaromatic compounds present.

Additional surface water and sediment samples were collected during the Supplemental Remedial Investigation. According to the analytical results, no detectable concentrations of nitroaromatic compounds or tetryl were detected.

As a result of the manufacturing of explosives and subsequent demolition of Alabama Army Ammunition Plant, the soils of the study area contain nitroaromatic residues. The concentrations of nitroaromatics observed in the soils are all well below the maximum levels allowable for industrial use. However, these soils are the major source of groundwater contamination in areas in which the groundwater is contaminated. The soils were found to be nonreactive.

Study Area 22 - Demolition Landfill: This disposal area, located near the flashing ground, consists of a semicircular landfill in a swale extending approximately 150 meters along Patrol Road. At this site, rubble from demolition activities was dumped in a 15 meters-wide semicircle around the edge of the swale to an average depth of approximately 2 meters. Several hundred kilograms of lead were found on the surface at this site in the form of sheets, wire, and pipe. Large amounts of cast iron, stainless steel fittings, aluminum, Transite, and other rubble were

partially buried by concrete and earth. Friable asbestos was also distributed in the soil of this area. Soil sampling identified lead residues in concentrations above background in two samples and a small concentration of tetryl.

According to the Confirmatory Survey report, this site was not investigated because it had been sufficiently defined by the Environmental Survey. However, the Environmental Survey does not address this site; it identifies only 21 study areas. The information presented above was taken from the Confirmatory Survey report.

Remedial Investigation sampling activities consisted of the collection and analysis of five soil samples. Results showed elevated levels of lead; however, none were above the established extraction procedure toxicity criterion.

Study Area 25 - Storage Battery/Demolition Debris: During the June 1985 site visit conducted as part of the Remedial Investigation, a previously undocumented disposal site, found during controlled hunting during the fall of 1984, was identified. Inspection of the disposal site indicated the presence of rubble and a number (at least 20) of heavy-duty lead acid battery casings. These consisted of approximately 30 pounds of lead components in a glass casing. Along with the batteries, several mercury switches (three of four observed), each containing 3 to 4 milliliters of mercury metal (liquified), were observed. The disposal site is located in a steep, overgrown ditch bank and is periodically flooded by backwater from the Coosa River. The batteries are reportedly still present at the site.

During the Remedial Investigation, samples were taken from soil and groundwater monitoring wells. Nine soil samples were collected and analyzed. Arsenic, chromium, copper, lead, nickel, thallium, zinc, and 2,4,6-trinitrotoluene were found in the soil at concentrations below the extraction procedure toxicity criteria used to define hazardous waste. In the groundwater sample, lead, thallium, and zinc concentrations were below the Federal drinking water standards.

Study Area 26 - Crossover Ditch: The Crossover Ditch was not identified as a study area until the Remedial Investigation, although the area was investigated during the Confirmatory Survey. The Crossover Ditch drains surface waters from the leaseback area, the rifle powder finishing area, the blending tower area, part of the northern and all of the southern portions of the propellant shipping area, the southern portion of the southern trinitrotoluene manufacturing area, and the sanitary landfill and lead facility. Two beaver dams have been constructed on the Crossover Ditch, a small one immediately east of the Series 223 Buildings and a large one south of the southern trinitrotoluene manufacturing area.

Although the Crossover Ditch drains areas that produced nitrocellulose and smokeless powder, contaminants from other sources may enter this drainage system. Potential sources of other contaminants include the coal pile at the Kimberly Clark power plant, the sanitary landfill and lead facility, the pipe flashing area immediately east of Study Area 3, and the large industrial waste reservoir on Kimberly Clark land directly south of the rifle powder finishing area. It is estimated that the Crossover Ditch collects and discharges into the Coosa River approximately 25 percent of the surface waters generated on or adjacent to Alabama Army Ammunition Plant property.

During the Environmental Survey, lead, cadmium, copper, and zinc were found in samples of surface water. The upper reaches of the Crossover Ditch had an iron oxide film on the water surface and iron staining of the sediments and aquatic vegetation, due to the impact of the coal pile. No detectable explosives-related contaminants were found. Asbestos fibers were found in the surface water. Analysis of 17 sediment samples showed residues from coal pile runoff in the upper reaches and evidence of coal pile particulate runoff throughout. Dinitrotoluene was found in all 17 samples.

Based on the findings of the Environmental Survey, the Confirmatory Survey concluded that the extent of contamination and contaminant migration potential had been adequately defined for the Crossover Ditch; therefore, it was not included in the Confirmatory Survey.

Two sediment samples were collected and analyzed as part of the Remedial Investigation. A concentration of 2,4-dinitrotoluene was found in one sample; in the second, a concentration of lead was found, but it was below extraction procedure toxicity criterion. It was not possible to take a surface water sample, due to dry conditions.

The Remedial Investigation concluded that no significant contaminant migration occurs in the surface or ground waters as a result of past industrial activities at the study area. According to the Remedial Investigation the drainage system is contaminated with nitroaromatic compounds. However, these sediments have been buried by channel wall erosion and sedimentation and do not contribute to surface water contamination. The low levels of nitroaromatic compounds found in the surface water during the Environmental Survey can be attributed to spoil pile runoff and sewer leakage.

Supplemental Remedial Investigation field activities included the collection and analysis of four surface water samples. No detectable concentrations of nitroaromatic compounds or tetryl were found in any of the samples.

Study Area 27 - Beaver Pond Drainage System: The Beaver Pond drainage system was not identified as a study area until the Remedial Investigation, although the area was investigated prior to this. The Beaver Pond drainage system flows west between the southern and northern trinitrotoluene manufacturing areas and derives its name from three large beaver ponds that have greatly changed the original ditch. The drainage system is a natural system that collects surface runoff from areas of planted trees and grassland. It originates in undeveloped areas south and east of the tetryl manufacturing area.

Potentially contaminated surface runoff in the Beaver Pond drainage system originates from the southern end of the tetryl manufacturing area and the shipping houses. Some surface drainage from the acid/organic manufacturing area, the tetryl manufacturing area, and the northern trinitrotoluene manufacturing area now enters the Beaver Pond drainage system. The system accounts for approximately 20 percent of the surface waters discharged from Alabama Army Ammunition Plant. Very large quantities of water are stored year-round in the three ponds.

The Environmental Survey conducted surface water sampling which found that the waters of the drainage system appear to be uncontaminated except for one location, the groundwater seepage

in the northern trinitrotoluene manufacturing area, where the sample contained trinitrotoluene. Asbestos fibers were also found. No contaminants flowed from Alabama Army Ammunition Plant through this drainage system. Sediment samples showed concentrations of nitroaromatic compounds.

Surface water sampling activities were conducted as part of the Confirmatory Survey. Levels of 2,4,6-trinitrotoluene and 2,4-dinitrotoluene that were detected in the stream water were below applicable criteria.

As part of the Remedial Investigation, one water sample was collected and analyzed. All compounds analyzed for were below the detection limits.

Supplement Remedial Investigation field activities included the collection and analysis of four surface water samples and four sediment samples. None of these samples contained detectable concentrations of nitroaromatic compounds or tetryl.

According to the Remedial Investigation, the drainage system is contaminated with nitroaromatic compounds. However, these sediments have been buried by channel wall erosion and sedimentation and do not contribute to surface water contamination. Surface water contamination with nitroaromatic compounds in the Beaver Pond stream occurs as a result of groundwater inflow in the floodplain; however, the levels of contaminants in the stream are below applicable criteria.

Industrial Sewer System: The industrial sewer system for the entire plant was originally investigated in the environmental survey. In Area B, the industrial sewer lines totaled approximately 32,500 feet in length, of which approximately 31,000 feet remain buried. The Remedial Investigation defined the nature and extent of contamination within the industrial sewer system in the four former production areas (northern and southern trinitrotoluene manufacturing areas, tetryl manufacturing area, and acid/organic manufacturing area) at Alabama Army Ammunition Plant. A total of 98 soil samples from within and outside the industrial sewer system, 14 sediment samples, and 7 water samples from within the surface drainages were collected and analyzed. Sampling results found varying concentrations of nitroaromatics compounds present throughout the samples areas. A Feasibility Study was conducted based on the results of the Remedial Investigation.

TC4A, TC4B - Stockpile Soils: Structures TC4A and TC4B contained contaminated soil that was excavated from Area A and placed in Area B pending incineration. TC4A was a building and TC4B is a membrane-covered concrete storage pad. Contaminated soils from Area A (adjacent property) were removed between 1986 and 1987. In February 1990, a tornado demolished Building TC4A. Soils from the demolished building were added to structure TC4B and secured with the membrane liner. In February 1991, a feasibility study was conducted for the stockpile soils area. The study concluded that explosives, lead, and asbestos contamination were present above regulatory limits. A feasibility study was conducted in July 1991 and a Record of Decision was released in December 1991. The selected remedy for the stockpile soils area was to thermally treat and dispose of the soil on-site.

4.1.2 Existing Areas Requiring Environmental Evaluations That Have Expanded in Size

No areas identified in the Remedial Investigation as requiring environmental evaluation have changed in size.

4.2 ADDITIONAL AREAS IDENTIFIED BY THE CERFA INVESTIGATION

The new environmental concerns described below are identified through the CERCLA investigation. These new environmental concerns were associated with CERCLA-related environmental issues and identified through on-site inspections, personnel interviews, and record searches. These environmental concerns were not investigated during any Remedial Investigation activities that were conducted at the installation.

4.2.1 Coke Oven

The coke oven had a concrete-covered pit of unknown dimensions located next to it. According to the caretaker, the pit was used as a burning pad. Transformer oil was poured onto copper wire to burn off the insulation covering the copper. It is unknown whether the transformer oil contained any PCBs. The concrete pad is still present and the pit is not accessible.

4.2.2 Downed Utility Poles with Transformers

During the visual inspection a downed utility pole was noted. The soil under and around the broken transformer was blackened and bare of vegetation. The caretaker said there were numerous such sites throughout the BRAC property and identified their location on a map. None of the transformers had been tested for PCB contamination. A total of 27 sites were identified, all located within the southern section of the General Services Administration Area except for one located in the smokeless powder manufacturing area. These sites were assigned a number that corresponds to the closest building and are listed below.

- ★ ***708A***: Three utilities poles are located north of Building 708A.
- ★ ***703E***: Two utility poles are located along the northwest portion of Building 703E.
- ★ ***703A***: Two utility poles are located along the southwest portion of Building 703A and one at the southeast corner.
- ★ ***2240***: Eight utility poles are located south of Building 2240 (which is titled PURCH'D POWER).
- ★ ***2170***: One utility pole is located near the southeast corner of Building 2170 with two more located south of the building.
- ★ ***704Y***: Three utility poles are located north of Building 704Y, one directly north and two northeast.

- ★ *717A*: Two utility poles are located along the northeast portion of Building 717A, and one is located southwest of the building.

- ★ *715C*: One utility pole is located off the southeast corner of Building 715C.

- ★ *227D*: One utility pole is located north of Building 227D, in the smokeless powder manufacturing area.

4.2.3 Gas Stations

One gas station listed in the Inventory of Military Real Property was located in the BRAC property. Building 724E is described as a gas station without a building (i.e., pump stations). The only information available stated that the underground storage tanks were installed in 1942. According to the caretaker all underground storage tanks have since been removed.

4.2.4 Transformer Storage Buildings

According to the caretaker it is likely that transformers were at one time stored behind Building 2240, an instrument shop. There was no evidence of stressed vegetation during the site inspection. The caretaker also reported that a leaking transformer was stored in Building 2180, part of the Manhattan Project Area, and was removed in 1987. When demolition activities began in Area A around 1973-1974, the contractor stored transformers removed from Area A in Building 2180. The caretaker stated that when the transformers were removed, cleanup activities by the contractor consisted of throwing absorbent on any liquids present. Old transformers stored behind Building 708A (a cafeteria) have been ransacked, according to the caretaker. This location is close to the base boundary where a highway runs close by. None of these transformers had been tested for PCB contamination.

4.2.5 Underground Storage Tanks

According to the caretaker, two underground storage tanks were recently removed, one near Building 302B and one near a flammable materials storehouse, Building 715C. One contained gasoline and the other contained diesel fuel; they each had a capacity of 12,000 gallons.

4.2.6 Pesticide Storage Building

Building 223B was reported by the caretaker, and verified in the Environmental Survey, to have stored fertilizers and pesticides. It was leased out approximately 20 years ago by the Parker Fertilizer Company in Sylacoga, Alabama, for storage. As of 1991 the building was cleaned out when demolition activities began at the Alabama Army Ammunition Plant. There were no reported releases.

4.3 ADJACENT AND SURROUNDING PROPERTIES

Land use surrounding the Alabama Army Ammunition Plant is primarily recreational, industrial, or undeveloped. Residences are buffered from the Alabama Army Ammunition Plant by other

industry or extensive undeveloped or wooded areas. Three farms border the installation and a small residential community lies several thousand feet southeast of it, next to Talladega Creek; an estimated 40 residents live within 1 to 2 miles. The property is surrounded as follows:

- ★ ***North***: A small industrial park, owned by Talladega County, lies north of the installation. A wastewater pump and filter station are located in this area. The Beaunit Corporation was at one time located in this industrial park.

- ★ ***South***: A paper plant, located on land south of the site, is owned by Kimberly Clark. The leaseback area is also located here.

- ★ ***East***: The McDonald Land Company is conducting wildlife management and research on the property (formerly Area A) and plans to leave it undeveloped.

- ★ ***West***: West of the site flows the Coosa River, which is bordered by a golf course owned by Kimberly Clark.

4.3.1 Existing or Potential Pathways of Contamination Migration

Topographic and hydrogeological information for the Alabama Army Ammunition Plant BRAC property provided in existing environmental documents was reviewed to assess potential contamination migration pathways onto the property from adjacent properties. This information was used in combination with data on potential contamination sources on adjacent and surrounding property to determine if there were any existing or potential environmental impacts on the Alabama Army Ammunition Plant BRAC property from offsite sources. Contamination source data were obtained through record searches, review of existing environmental reports, personnel interviews, and property site visits. The result of these adjacent and surrounding property evaluations are described below.

Potential pathways of contamination onto the BRAC property are from stormwater runoff and groundwater migration. Drainage onto the BRAC property occurs in several locations. The Crossover Ditch, collects and discharges into the Coosa River approximately 25 percent of the surface waters on or adjacent to the BRAC property. Potential contaminants from adjacent properties include Kimberly Clark's power plant coal pile, sanitary landfill, all large industrial water reservoir. In general, groundwater flow onto the BRAC property is from the north and west. The direction of groundwater flow at Alabama Army Ammunition Plant is from the topographically higher areas in the northeast portion of the parcel toward the Coosa River to the west and the Talladega Creek to the southeast. A steep groundwater gradient slopes from the upland areas to the lowland areas where the groundwater flow is divided by the Coosa River and Talladega Creek.

4.3.2 Environmental Concerns from Adjacent and Surrounding Properties

To identify potential offsite contamination sources for the Alabama Army Ammunition Plant facility, a records search of Federal and State data bases (see Section 2.2) was conducted. The results of this search are provided in Appendix B. The search indicated the following:

- ★ Property formerly known as Area A is included on the National Priorities List. No other National Priorities List sites are within a 2.75-mile radius.

- ★ The Beaunit Corporation, which lies in the industrial park north of Alabama Army Ammunition Plant, went out of business in 1972. The area is currently under CERCLA review. No other information is available concerning the Beaunit Corporation.

- ★ Wesley Industries, Inc., also in the industrial park, is a RCRA generator and is required to submit air emissions reports.

- ★ No hazardous spills were reported within the zip code area of the Alabama Army Ammunition Plant.

- ★ The Kimberly Clark Corporation, is a RCRA generator, has a National Pollution Discharge Elimination System permit for release to surface water, and is required to submit air emissions reports. According to the Alabama Army Ammunition Plant caretaker, violations of the National Pollution Discharge Elimination System have occurred over the years.

In addition to the data base search completed for the installation, adjacent property visual site inspections and owner/operator interviews were also conducted. During the site inspection, there was no visible evidence of adjacent property operations that represented a potential contamination migration source.

4.4 Related Environmental, Hazards, and Safety Issues

Military installations frequently contain issues that the USAEC believes fall outside of the provisions of CERFA. For example, while a release of lead-based paint onto the ground may be a CERCLA concern, the application of lead-based paint to a building surface generally is not. However, lead-based paint applied to buildings may represent a safety hazard to young children. Similarly, other substances or materials commonly applied to or found in buildings (for example, radon and asbestos) may not be explicitly regulated under CERCLA, but may require that potential transferees and lessees be notified of their presence.

USAEC has sought to balance the statutory requirements of CERFA with the law's intent to identify for the public uncontaminated property that can be expeditiously reused. Notice has been provided for parcels that appear to be uncontaminated under the definition provided in CERFA, but which may contain environmental, hazard, or safety issues. Buildings that contain asbestos-containing materials, lead-based paint, or naturally occurring radon fall into this category and are identified as CERFA Parcels with Qualifiers in this CERFA Report. Parcels that contain stored (not in use) equipment containing some level of PCB oil, stored low level radionuclide-containing equipment such as dials and weapon site posts, and unexploded ordnance are also designated CERFA Parcels with Qualifiers.

In those cases where, for example, asbestos or PCBs have been disposed in the environment, the parcel has been identified as CERFA Disqualified. In this example, the designation indicates that a CERCLA hazard may exist at this location. The following discussion addresses the presence of asbestos-containing material, lead-based paint, PCB storage, radon, unexploded ordnance, and radionuclides.

4.4.1 Asbestos

A plant-wide asbestos survey was conducted as part of the Environmental Survey. Buildings with asbestos-containing material, i.e., the majority of buildings in the BRAC property, have been or are scheduled for demolition.

Overhead Streamline: An overhead steamline, listed as 502A in the Inventory of Military Real Property, was noted throughout various areas of the BRAC property. The steamline, constructed in 1942 and insulated with asbestos-containing material, covered approximately 9,372 linear feet. How much steamline is located in the BRAC property is unknown. Portions of the steamline have been torn down and the asbestos covering has been left on the ground surface, according to numerous documents and the caretaker. What remains of the steamline is scheduled to be removed. No maps are available showing the location of the steamline.

Buildings: The Environmental Survey identified asbestos-containing buildings, which were not included in any of the study areas; they are listed below. They have all been or are scheduled for demolition. For those buildings still standing, the asbestos-containing material will be removed from the building and disposed of offsite prior to demolition.

- ★ Buildings 223C, 223E, 223F, 223G, and 223H, all storage buildings, had asbestos hanging from outside overhead pipe. These buildings are scheduled for demolition.

- ★ Building 2403, which contained heavy equipment, had asbestos-covered pipe in the northwest corner only. This building is scheduled for demolition.

- ★ Building 717A, a supply shop, had an asbestos-covered pipe running throughout the building. This building is scheduled for demolition.

- ★ Building 707H had friable asbestos throughout much of the area. This building was demolished prior to the site visit.

- ★ Building 703E had asbestos peeling and falling from pipes. This building was demolished prior to the site visit.

- ★ Building 708A had friable asbestos exposed on pipes. This building was consumed in a fire in November 1993 during asbestos removal operations.

- ★ The basement of Building 2140 was used as a disposal site for asbestos-containing material waste generated during demolition activities in the 1970's, according to

the caretaker. The building was later demolished and the basement was topped with concrete with the asbestos-containing material still present.

4.4.2 Lead-based Paint

No lead-based paint survey of buildings at Alabama Army Ammunition Plant was conducted because only one building will remain on the BRAC property after demolition activities are complete. Building 702A, originally the post headquarters, is currently being used as an office by the caretaker. This is the only building in the BRAC property not scheduled for demolition. Because it was built in 1942, it is assumed that it contains lead-based paint.

4.4.3 Polychlorinated Biphenyls

In-use transformers that contain PCBs but that are not leaking were not considered in the CERFA investigation. Leaking transformers were considered and 27 were identified on BRAC property.

4.4.4 Radon

A radon survey of Alabama Army Ammunition Plant buildings was not conducted. All but one of the buildings in the BRAC property have been demolished or are scheduled for demolition.

4.4.5 Unexploded Ordnance

There is no history of unexploded ordnance on BRAC property. According to available information, all activities involving unexploded ordnance occurred in Area A.

4.4.6 Radionuclides

A radiation study conducted in 1991 confirmed that no radioactive contamination remained in the five buildings in the Manhattan Project Area.

4.5 REMEDIATION EFFORTS

Several actions have been undertaken at Alabama Army Ammunition Plant to remediate areas of potential threat to human health and the environment. These actions include the removal or containment of contaminants as listed below.

Asbestos: Asbestos abatement efforts coincide with demolition activities. Prior to demolition of a building, the asbestos is removed and disposed of offsite.

Aboveground Storage Tanks: According to the caretaker, before 1980 the Alabama Army Ammunition Plant had approximately 2,000 aboveground storage tanks during active operation of the entire plant. These have all been removed and there is no information available that identifies the former location of these tanks.

Underground Storage Tanks: There are no underground storage tanks in the BRAC property according to the caretaker. A large number of underground storage tanks were removed in the late 1960's and early 1970's when building demolition began. No records show the former location of the underground storage tanks.

Transformers: The transformers stored in Buildings 2240 and 2180 have been removed.

4.6 CERFA-EXCLUDED PARCELS

CERFA-Excluded Parcels consist of those parcels to be retained by the Army or other Department of Defense agency or property that will be transferred to another Federal agency with restrictions by statute. At present, the Army does not have plans to retain any portion of Alabama Army Ammunition Plant.

5.0 SITE PARCELIZATION

After reviewing investigation documents, regulatory records, personnel interviews, and visual inspections, TETC identified parcels on the installation as CERFA Parcels, CERFA Parcels with Qualifiers, CERFA Disqualified Parcels, or CERFA-Excluded Parcels in accordance with the definitions in Section 1.2. The parcels are delineated on a map of the BRAC portion of the installation using a 1-acre square grid for boundary definition. The Army chose a 1-acre grid system to aid in the presentation of data gathered during the CERFA Report investigation, and to facilitate use of the document by reuse groups and others. The 1-acre grid provided a consistent method to report and locate environmental or other concerns. In the many cases where the concerns are much smaller than 1-acre, the grid system simplifies the depiction of the concern. Accordingly, the areal extent of many small areas of concern, such as underground storage tank sites, are liberally depicted in the CERFA Report. Additionally, the 1-acre grid size was chosen as a generally redevelopable parcel size for either industrial or residential uses. However, the grid does not drive reuse or restrict it. Reuse decisions should be made irrespective of the grid. The entire 1-acre grid square is colored or shaded to indicate the applicable parcel category on the basis of the history of storage or release for any portion of that square. Parcels are labelled according to a system outlined in Section 1.2 of this report to indicate the applicable parcel category and the contaminating circumstances. Parcel labels are connected to the respective parcel boundaries by a line or are located within the parcel boundaries.

Where CERFA Disqualified Parcels and CERFA Parcels with Qualifiers have coincided, the overlapped area has been designated CERFA Disqualified. Labels for any such overlapped parcels also indicate the presence of the qualifying hazards. CERFA-Excluded Parcels have been excluded from this investigation of contaminant locations and therefore do not overlap with CERFA Disqualified Parcels or CERFA Parcels with Qualifiers. Structures within CERFA Disqualified Parcels that contain qualifying safety hazards are designated with the applicable qualifying label, where map scale permits this level of detail.

TETC's investigation and subsequent parcelization of Alabama Army Ammunition Plant determined that approximately 1,279 acres of the facility fall within the CERFA Parcel category. Approximately 6 acres of the facility are categorized as CERFA Parcels with Qualifiers. Nine hundred and two (902) acres constitute the CERFA Disqualified portion of the installation. The CERFA Parcels are located predominantly in the northwest and southeast portions of the installation.

In determining the applicable parcel categories for the installation property, TETC observed the following guidelines provided by USAEC for specific circumstances:

- ★ Buildings constructed prior to 1978 are assumed to contain lead-based paint. A similar assumption is made for asbestos in buildings constructed prior to 1985.

- ★ Storage of petroleum products, petroleum derivatives, and CERCLA-regulated hazardous substances will prevent an area from becoming a CERFA Parcel as long as that storage is for one year or longer. The quantity of substances stored is not relevant to determining the applicable parcel category. However, if the operation requiring such substances is in the immediate area, and the storage is in limited quantities for immediate use, the area is not precluded from being a CERFA Parcel.

- ★ Nonleaking equipment containing less than 50 parts per million PCBs does not preclude an area from becoming a CERFA Parcel. Nonleaking, out-of-service equipment with greater than 50 parts per million PCBs will place an area in the CERFA Parcel with Qualifier category. An area is designated CERFA Disqualified if there is a known release containing greater than 50 parts per million PCBs.

- ★ Areas where there are transport systems or equipment that handle hazardous substances or petroleum products and on which there has been no release, storage, or disposal of these substances are categorized as CERFA Parcels.

- ★ Ordnance disposal locations are designated CERFA Disqualified. This does not include ordnance impact areas that are designated CERFA Parcels with Qualifiers.

- ★ Routine pesticide and herbicide application in accordance with manufacturer's directions and chlorofluorocarbons and halon in operational systems do not preclude an area from becoming a CERFA Parcel.

- ★ Coal storage piles and railroad tracks do not automatically preclude an area from becoming a CERFA Parcel.

State and Federal (where applicable) comments on the draft CERFA Report were incorporated into the final CERFA Report. These comments are provided in Appendix C.

5.1 Parcel Designation Maps

Table 5-1 and Figure 5-1 identify the breakdown of Alabama Army Ammunition Plant property according to the criteria for parcel identification under CERFA. Appendix D contains the data base from which Table 5-1 and Figure 5-1 are generated.

5.2 Tract Map

The property boundaries and all property transfers including prior ownership information is shown in Figure 5-2.

5.3 Summary CERFA Maps

Figure 5-3 summarizes the breakdown of Alabama Army Ammunition Plant property according to the criteria for parcel identification under CERFA.

TABLE 5-1. Parcel Descriptions, Alabama Army Ammunition Plant

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDIATION OR MITIGATION
1P	517	52,19		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
2D-/A/P(P)/PS/HR/HS	558	51,43	Acid/Organic Manufacturing Area	Disqualified, Hazardous Substance Release	Release of Nitrobenzene, Nitrate, Nitrite, Asbestos associated with Acid/Organic Manufacturing Area	2,6	
		57,44	Aniline Sludge Basin	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Cadmium, Nickle, Chromium, Copper, Zinc associated with Aniline Sludge Basin	2,5,6,12	
		45,30	Beaver Pond Drainage System	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos associated with Beaver Pond Drainage System	2,5,6	
		51,43	Building 302B	Disqualified, Petroleum Storage	Gasoline/Diesel stored in 12,000 gal UST -- Used from 1942 to 1993 (Ammonia Oxidation Plant)	28	Removed
		18,14	Building 703A	Disqualified, Hazardous Substance Release (P)	Release of PCBs associated with Downed Utility Poles	27,28	
		19,15	Building 703E	Qualified, Asbestos Disqualified, Hazardous Substance Release (P)	Asbestos Containing Material Release of PCBs associated with Downed Utility Poles	2 27,28	
		18,15	Building 708A	Qualified, Asbestos Disqualified, Hazardous Substance Release (P)	Asbestos Containing Material Release of PCBs associated with Downed Utility Poles	2 27,28	
		17,28	Cross Over Ditch	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos, Lead, Cadmium, Copper, Zinc associated with Cross Over Ditch	2,5,6,12	
		48,35	Northern TNT Manufacturing Area	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos associated with Northern TNT Manufacturing Area	2,5,6,12	
		19,20	Red Water Ditch	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Lead, Asbestos associated with Red Water Ditch	2,6,12	
		34,25	Red Water Storage Basin	Disqualified, Hazardous Substance Release	Release of Nitroaromatics associated with Red Water Storage Basin	2	
		31,20	Sanitary Landfill & Lead Facility	Disqualified, Hazardous Substance Release	Release of Lead, Mercury, Nitrobenzene, Nitroaromatics, Asbestos associated with Sanitary Landfill & Lead Facility	2,6	
		46,26	Southern TNT Manufacturing Area	Disqualified, Hazardous Substance Release	Release of Nitrobenzene, Nitroaromatics, Asbestos associated with Southern TNT Manufacturing Area	2,5,6,12	
		46,44	Stockpile Soils TC4A	Disqualified, Hazardous Substance Storage	Explosives, Lead, Asbestos stored in 35,000 CY Piles - First used in 1986 (Stockpile Soils Area)	17,27,28	Active - Thermal treatment scheduled
		46,42	Stockpile Soils TC4B	Disqualified, Hazardous Substance Storage	Explosives, Lead, Asbestos stored in 35,000 CY Piles - First used in 1986 (Stockpile Soils Area)	17,27,28	Active - Thermal treatment scheduled
		64,49	Tetryl Manufacturing Area	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos associated with Tetryl Manufacturing Area	2,5,6	

TABLE 5-1. Parcel Descriptions, Alabama Army Ammunition Plant

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDIATION OR MITIGATION
3P	392	23,25		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
4P	143	10,25		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
5D-/HR	9	28,30	Manhattan Project Area	Disqualified, Hazardous Substance Release	Release of Lead, Asbestos associated with Manhattan Project Area	2	
6D-/PS/HR	171	57,10	Blending Tower Area	Disqualified, Hazardous Substance Release	Release of Asbestos associated with Blending Tower Area	2	
		58,17	Building 724E	Disqualified, Petroleum Storage	Gasoline stored in an UST - First used in 1942 (Gas Station)	29	Removed
		66,27	Propellant Shipping Area	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos associated with Propellant Shipping Area	2	
7P	225	73,12		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
8D-/HR(P)	2	27,19	Coke Oven	Disqualified, Hazardous Substance Release (P)	Release of PCBs associated with Coke Oven	27, 28	
9D-/HR	8	91,19	Demolition Landfill	Disqualified, Hazardous Substance Release	Release of Lead, Nitroaromatics, Asbestos associated with Demolition Landfill	2,5,6,12	
10D-/HR	68	45,11	Rifle Powder Finishing Area	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Asbestos associated with Rifle Powder Finishing Area	2	
11P	2	16,14		CERFA Parcel	No hazardous substances or petroleum products have been stored, released or disposed in this area.		
12D-/A/PS/HR/HS	80	25,14	Building 2140	Disqualified, Hazardous Substance Release	Release of Asbestos associated with Building 2140 Asbestos disposal	27, 28	
		26,12	Building 2170	Disqualified, Hazardous Substance Release (P)	Release of PCBs associated with Downed Utility Poles	27,27a	
		37,14	Building 223B	Disqualified, Hazardous Substance Storage (P)	Fertilizers & Pesticides stored in Containers -- Used from 1971 to 1991 (Pesticide Storage)	27,28	

TABLE 5-1. Parcel Descriptions, Alabama Army Ammunition Plant

PARCEL NUMBER	APPROX. SIZE (ACRES)	COORD (X,Y) ON FIG 5-1	LOCATION	CATEGORY	BASIS	APP. A REF(S)	REMEDIATION OR MITIGATION
12D-/A/PS/HR/HS	80	37,13	Building 223C	Qualified, Asbestos	Asbestos Containing Material	2	
		24,14	Building 2240	Disqualified, Hazardous Substance Release (P)	Release of PCBs associated with Downed Utility Poles	27,28	
		34,11	Building 227D	Disqualified, Hazardous Substance Release (P)	Release of PCBs associated with Downed Utility Poles	27,28	
		28,12	Building 2403	Qualified, Asbestos	Asbestos Containing Material	2	
		27,11	Building 704Y Building 707H	Disqualified, Hazardous Substance Release (P) Qualified, Asbestos	Release of PCBs associated with Downed Utility Poles Asbestos Containing Material	27,28 2	
		31,11	Building 715C	Disqualified, Petroleum Storage Disqualified, Hazardous Substance Release (P)	Gasoline/Diesel stored in 12,000 gal UST -- Used from 1942 to 1993 (Flammable Materials Storehouse) Release of PCBs associated with Downed Utility Poles	28 27,28	Removed
		28,11	Building 717A	Qualified, Asbestos Disqualified, Hazardous Substance Release (P)	Asbestos Containing Material Release of PCBs associated with Downed Utility Poles	2 27,28	
		29,12	Smokeless Powder Manufacturing Area	Disqualified, Hazardous Substance Release	Release of Nitroaromatics associated with Smokeless Powder Facility	2	
		31,14	Storage Battery/Demolition Debris	Disqualified, Hazardous Substance Storage	Battery/Demolition Debris stored in 100,000 sq. ft. Piles - First used in 1984 (Storage Battery/Demolition Debris)	6,12	Active
13Q-/L(P)	2	20,14	Building 702A	Qualified, Lead (P)	Lead-based paint associated with structure built in 1942	27,28,29	
14Q-/A	4	38,13	Building 223E	Qualified, Asbestos	Asbestos Containing Material	2	
		38,14	Building 223F	Qualified, Asbestos	Asbestos Containing Material	2	
		39,13	Building 223G	Qualified, Asbestos	Asbestos Containing Material	2	
		39,14	Building 223H	Qualified, Asbestos	Asbestos Containing Material	2	
15D-/HR	7	80,9	Flashing Ground	Disqualified, Hazardous Substance Release	Release of Nitroaromatics, Lead, Asbestos associated with Flashing Ground	2,5,6,12	
		82,10	Lead Remelt Facility	Disqualified, Hazardous Substance Release	Release of Lead, Asbestos associated with Lead Remelt Facility	2,5,6	

D=CERFA DISQUALIFIED PARCEL
E=CERFA EXCLUDED PARCEL
P=CERFA PARCEL
Q=CERFA PARCEL WITH QUALIFIERS

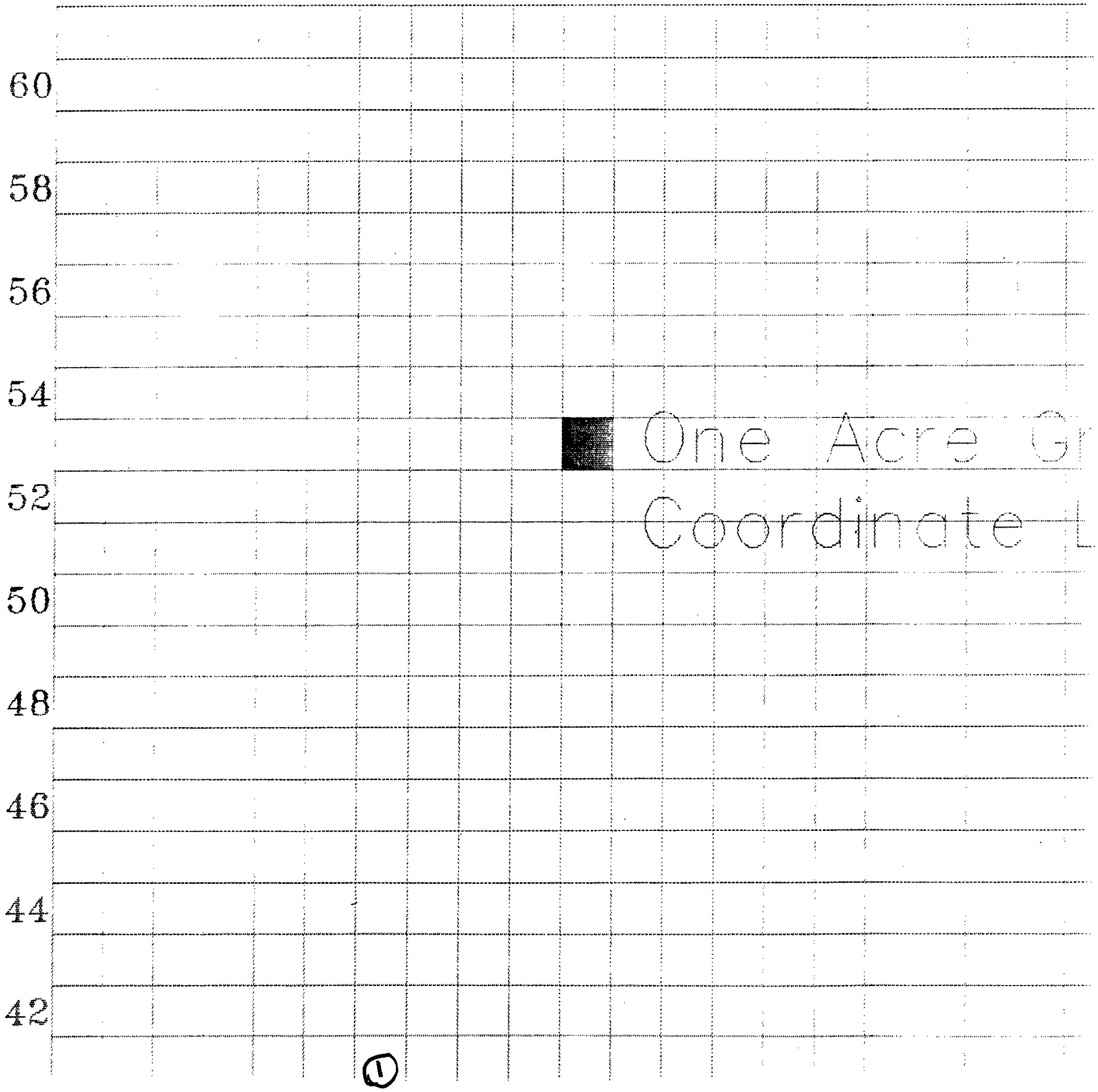
A=ASBESTOS
L=LEAD-BASED PAINT
P=PCB STORAGE
R=RADON
RD=RADIONUCLIDES
X=UNEXPLODED ORDNANCE

PR=PETROLEUM RELEASE
PS=PETROLEUM STORAGE
HR=HAZARDOUS SUBSTANCE RELEASE
HS=HAZARDOUS SUBSTANCE STORAGE

(P)=POSSIBLE QUALIFIER

FIGURE 5-1
PARCEL DESIGNATION MAP, ALABAMA ARMY AMMUNITION PLANT, ALABAMA

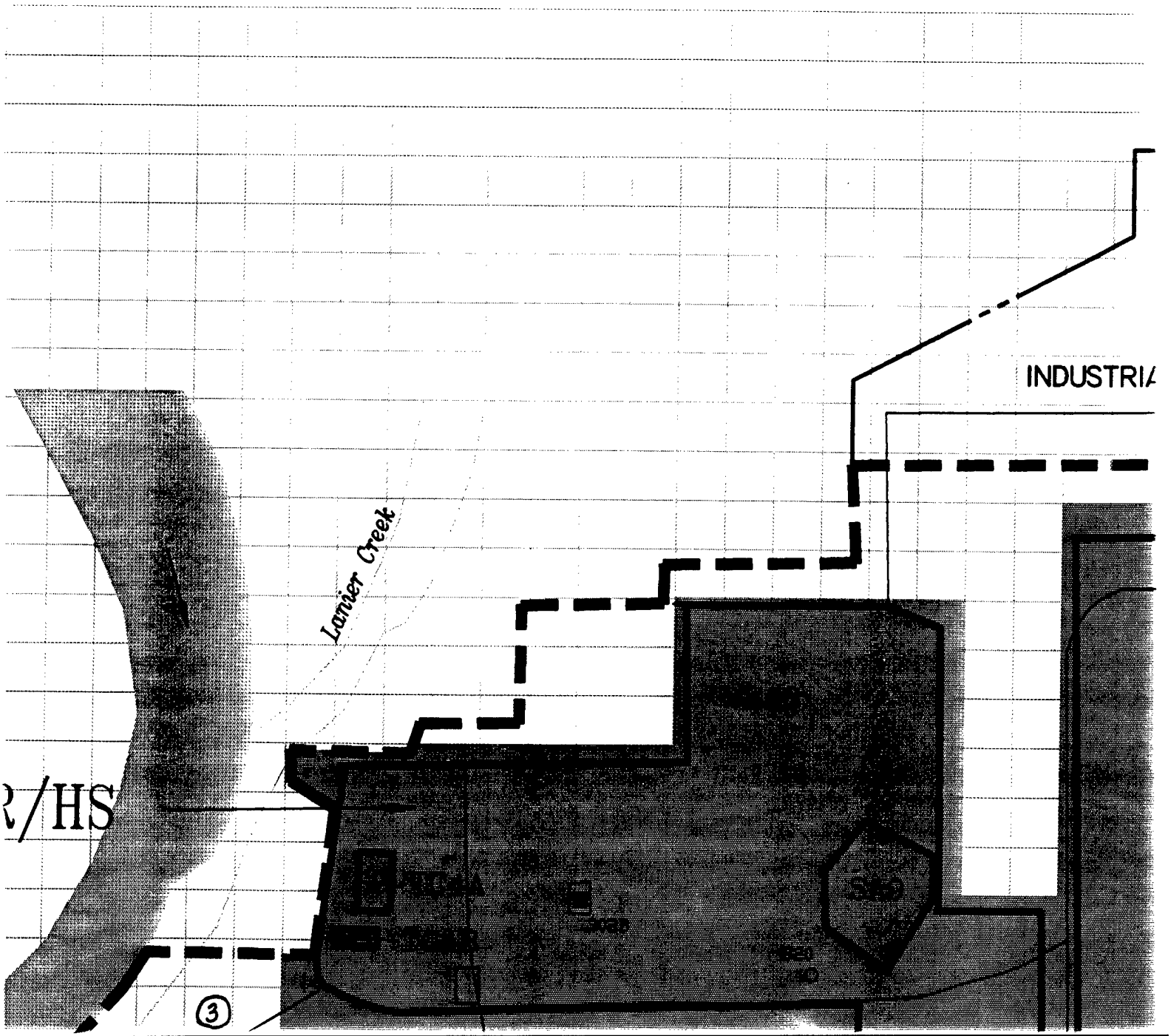
REVISION	DATE
0	11/19/93
1	12/10/93
2	04/14/94



re Grid Square

ate Location: (11,53)

2D-/A/P(P)/PS/HR/HS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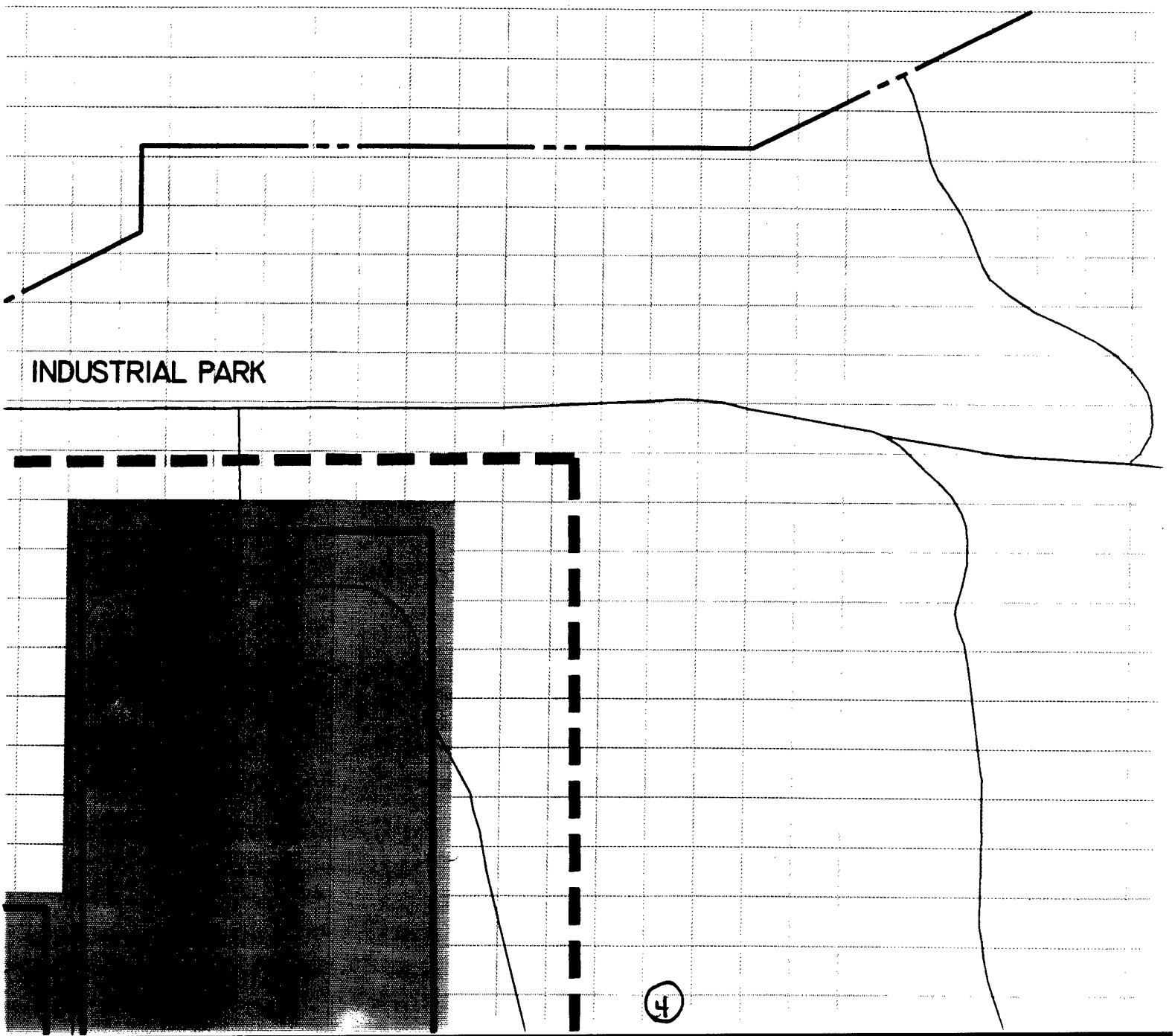
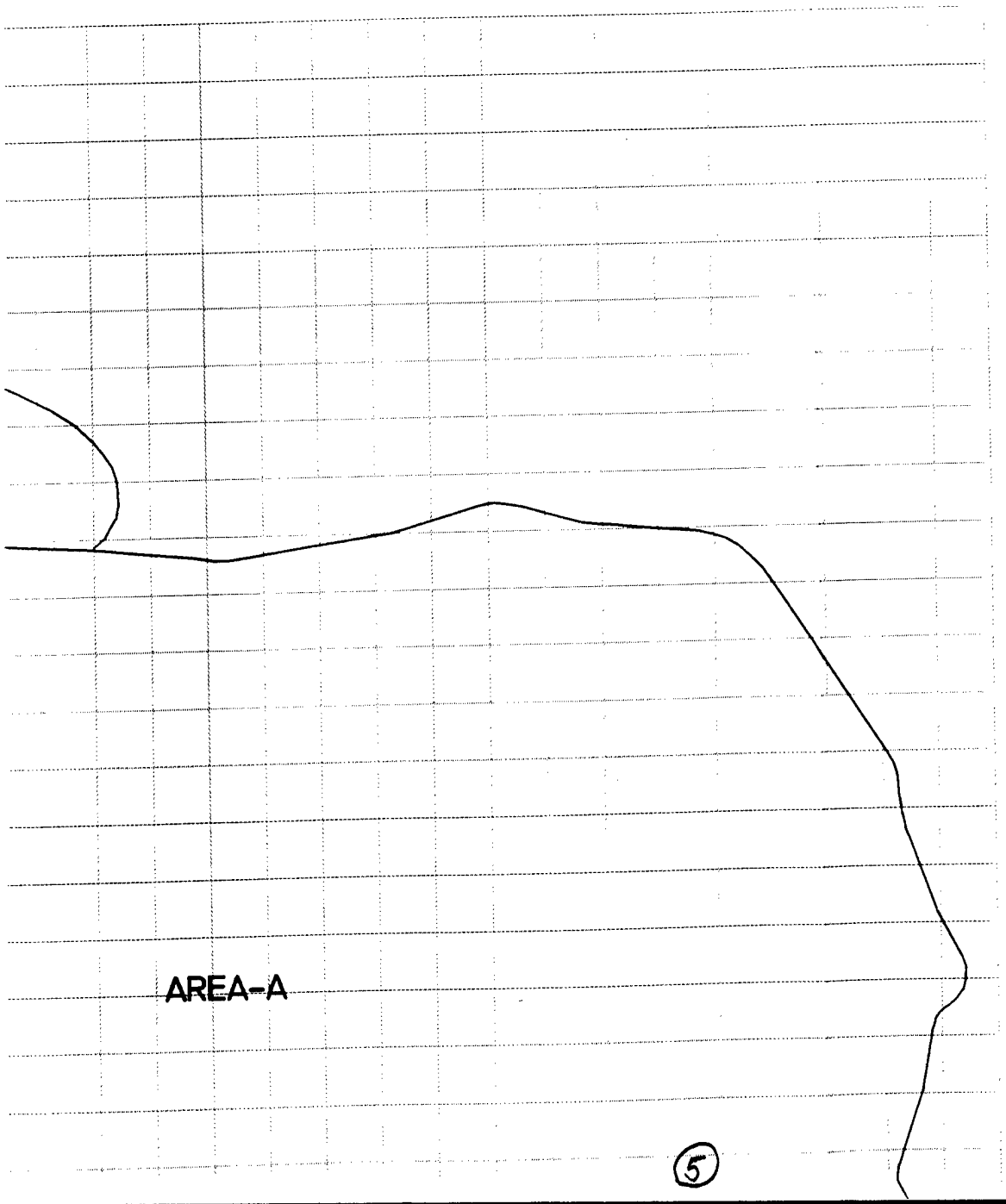
Lanier Creek
R/HS
3


INDUSTRIAL PARK

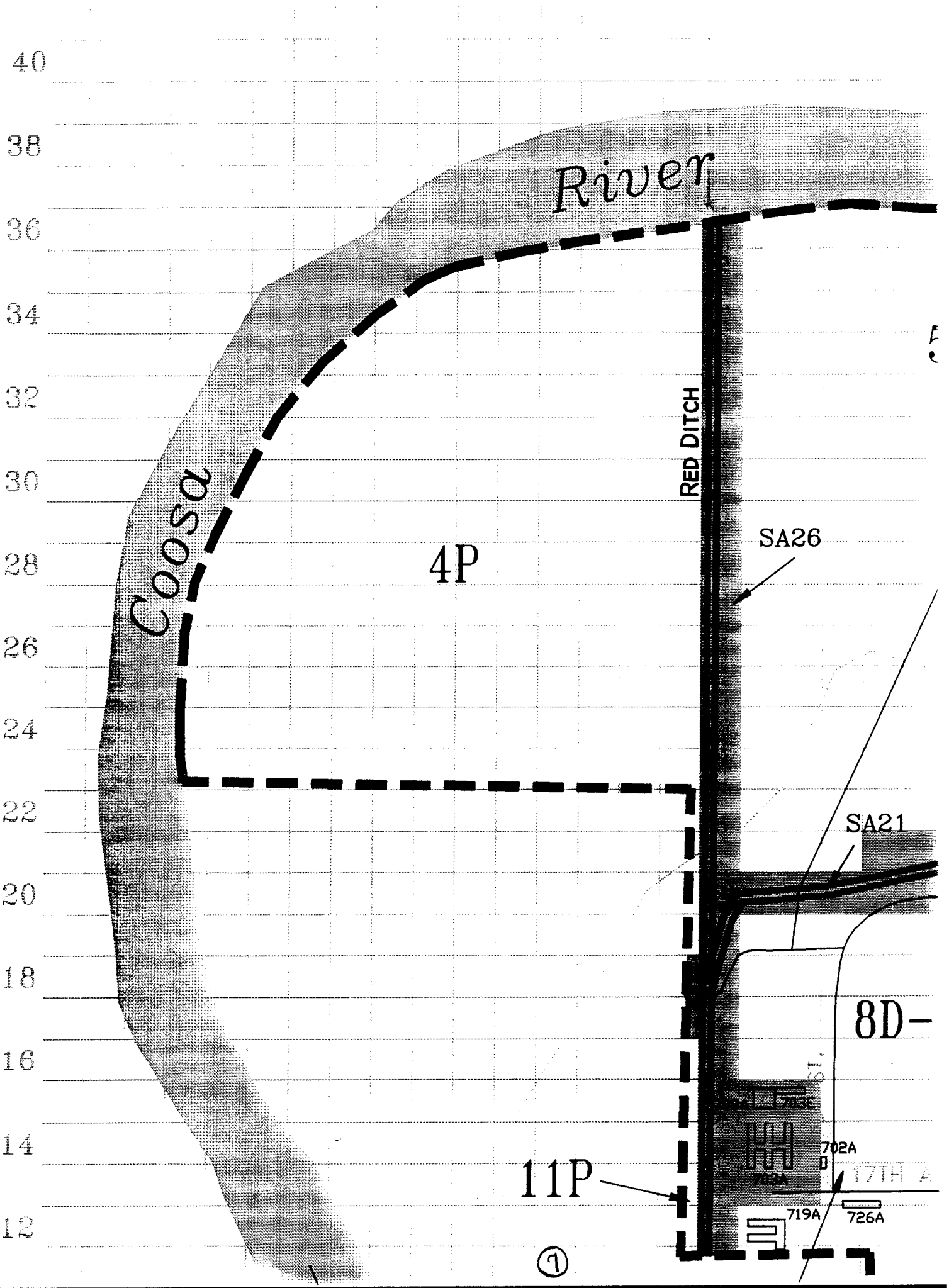


SA

SA10

Study Area Currently
Under Investigation

(6)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38
36
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30
28
26
24
22
20
18
16
14
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River
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RED DITCH
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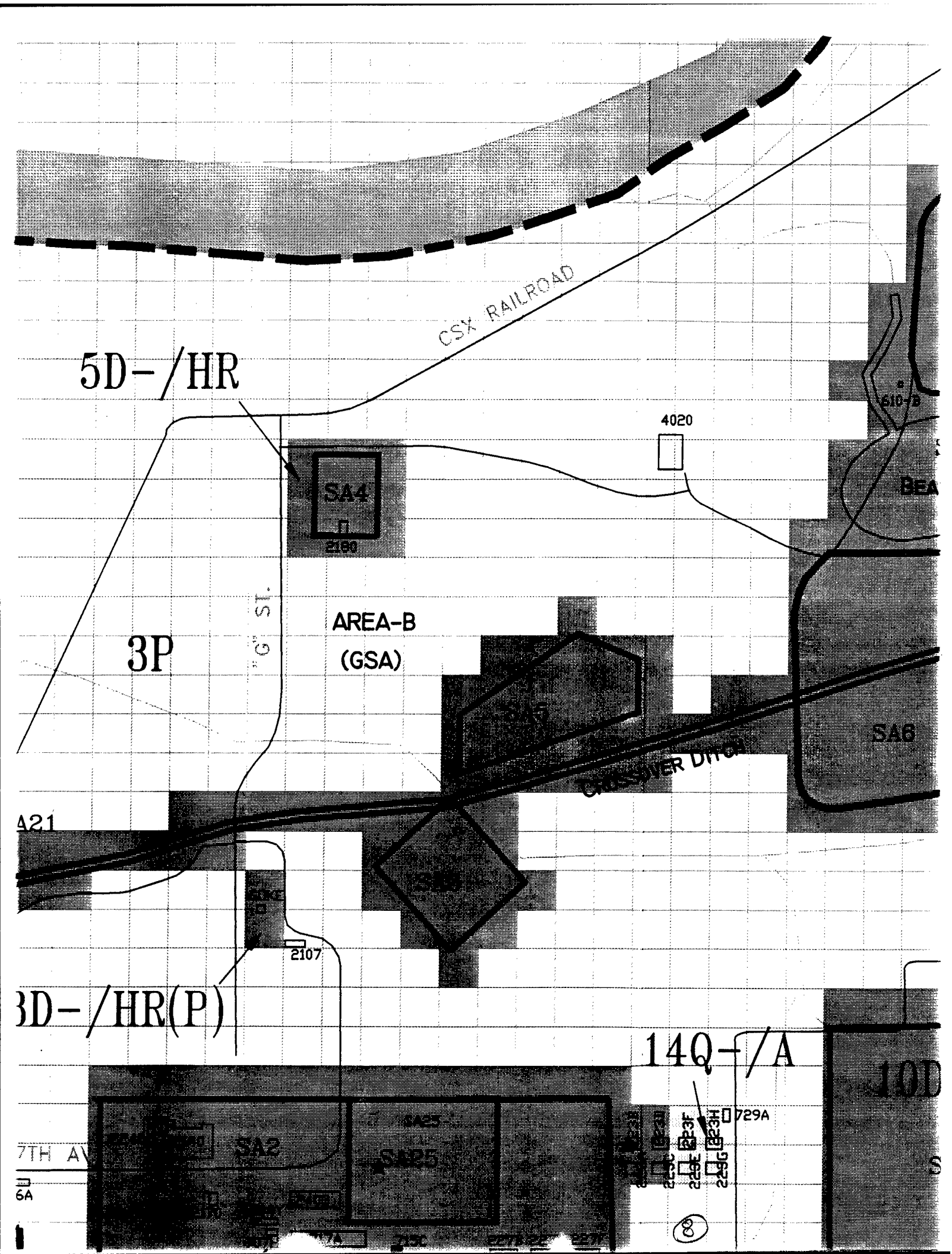
8D-
11P
703E
702A
719A
726A
17TH


CSX RAILROAD
5D-/HR
4020
SA4
2100
AREA-B
(GSA)
3P
"G" ST.
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CROSSOVER DITCH
A21
2107
3D-/HR(P)
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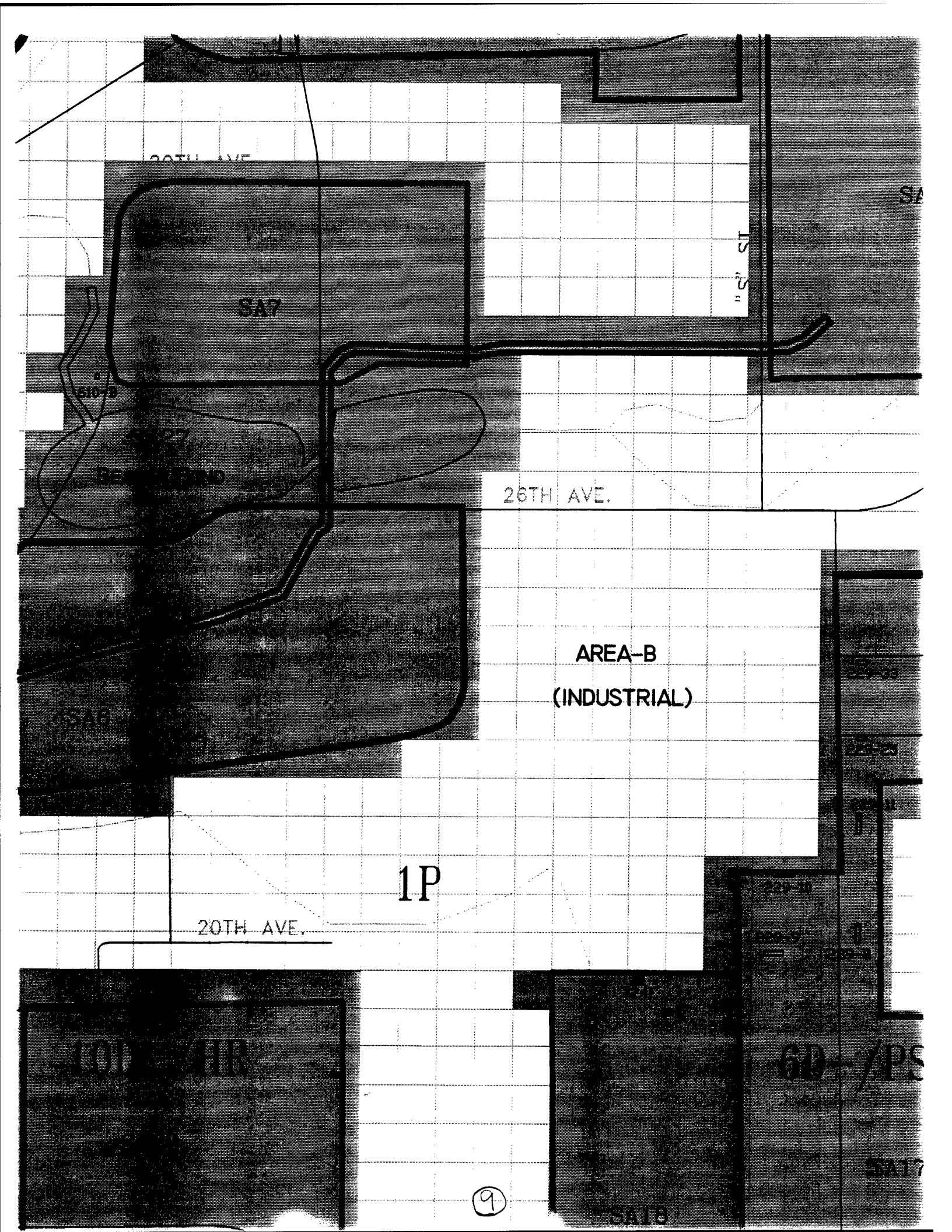
729A
SA2
SA25
7TH AV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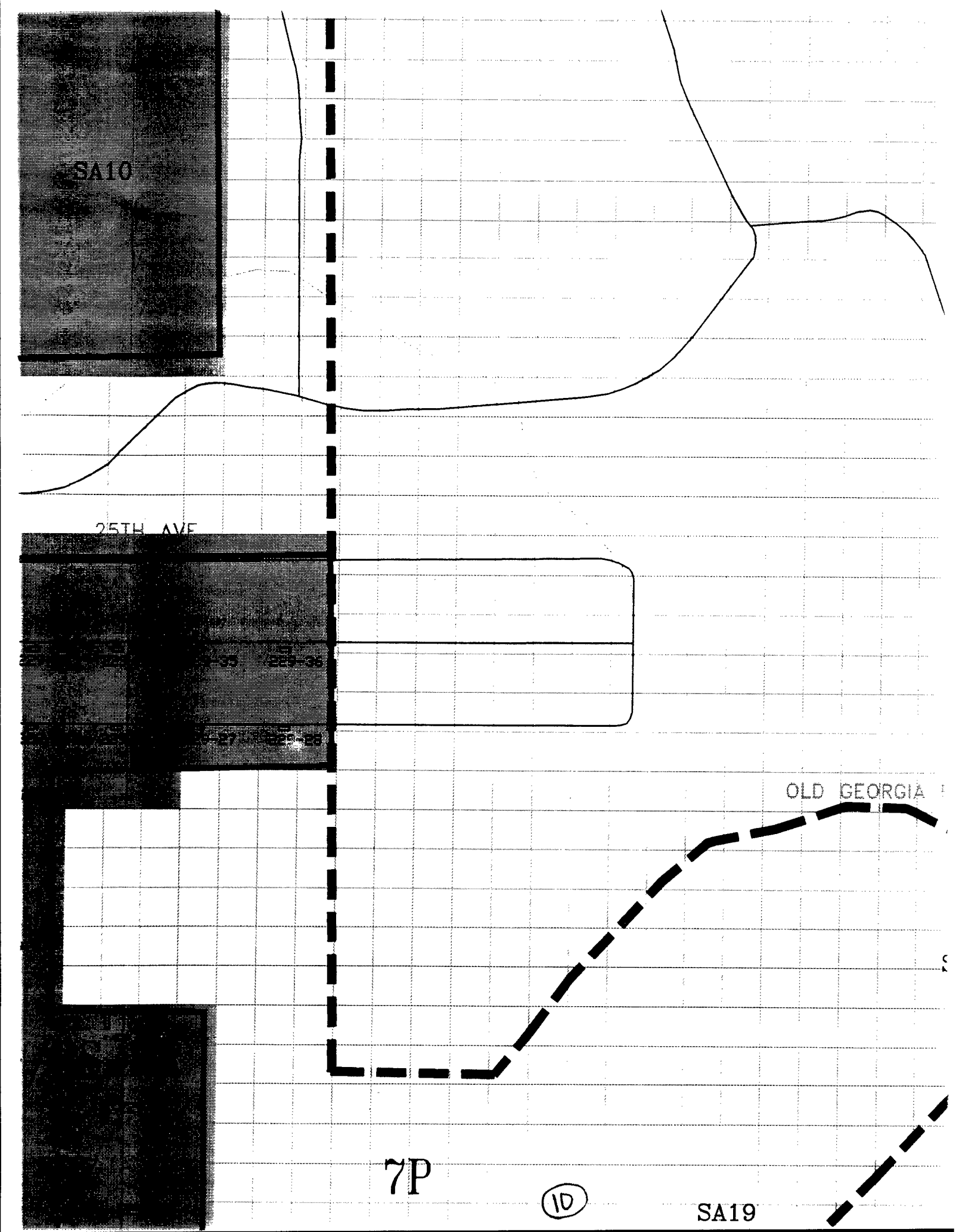
610-B
26TH AVE.
AREA-B
(INDUSTRIAL)
SA6
1P
20TH AVE.
101
HR
6D
SA15
9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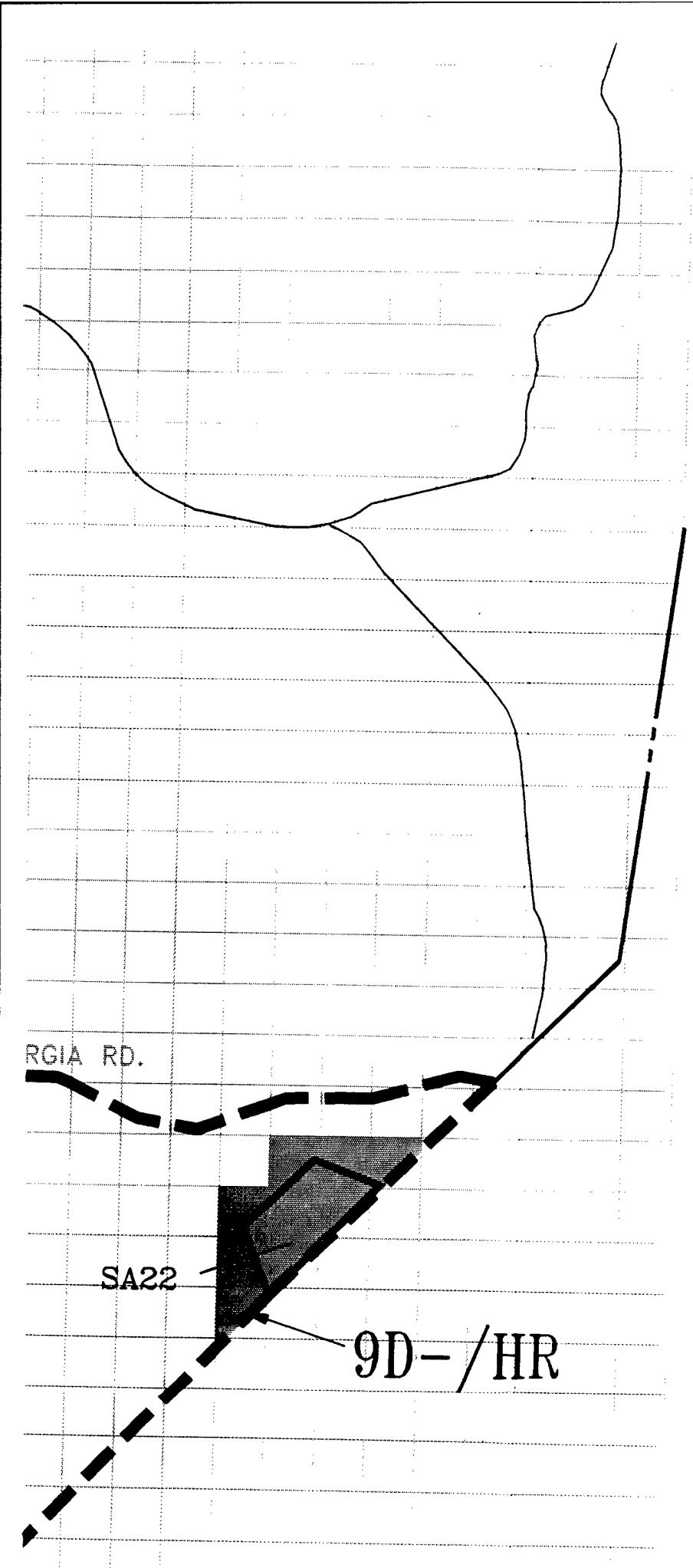
25TH AVE
OLD GEORGIA
7P
10
SA19



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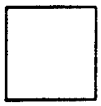
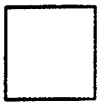
SATU — Under Investigation

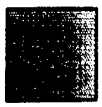
 Hazardous Substance Storage or Waste Accumulation Area

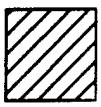
 Underground Storage Tank

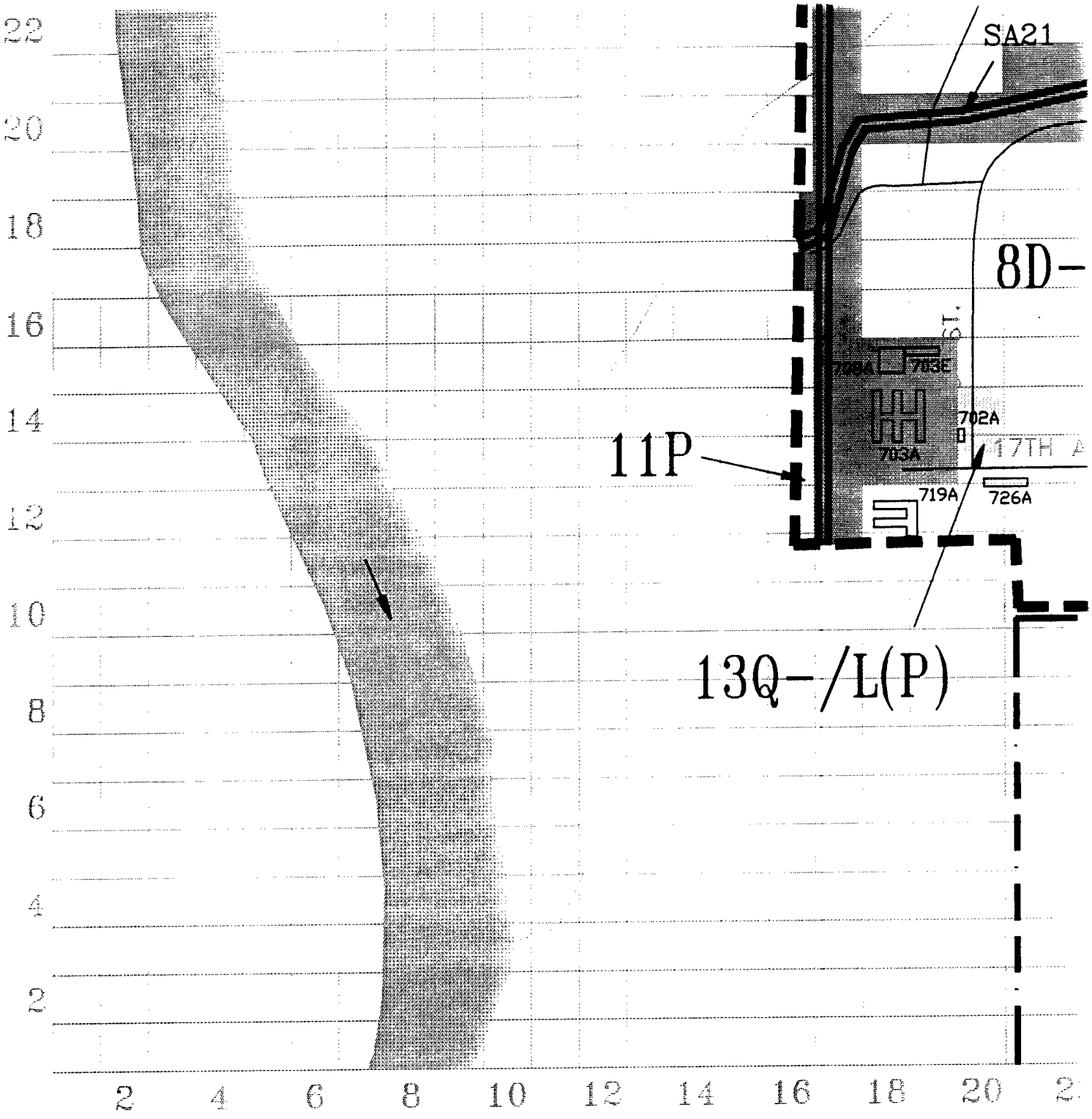
 BRAC Property Boundary

 CERFA Parcel

 CERFA Parcel with Qualifiers

 CERFA Disqualified Parcel

 CERFA Excluded Parcel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8D-
11P
13Q-/L(P)
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703A
719A
726A
17TH A
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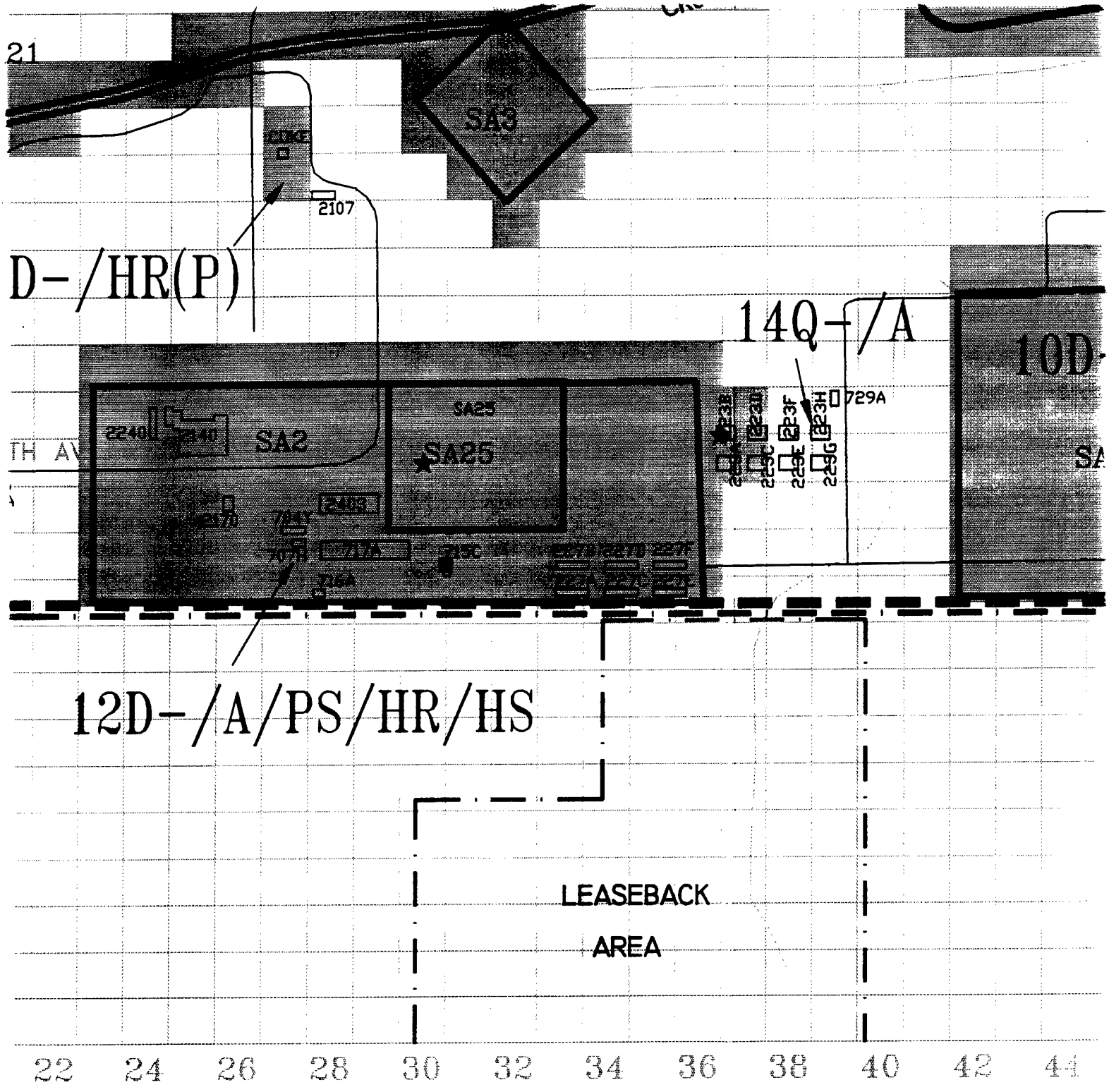
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D-/HR(P)
14Q-/A
10D
729A
SA2
SA25
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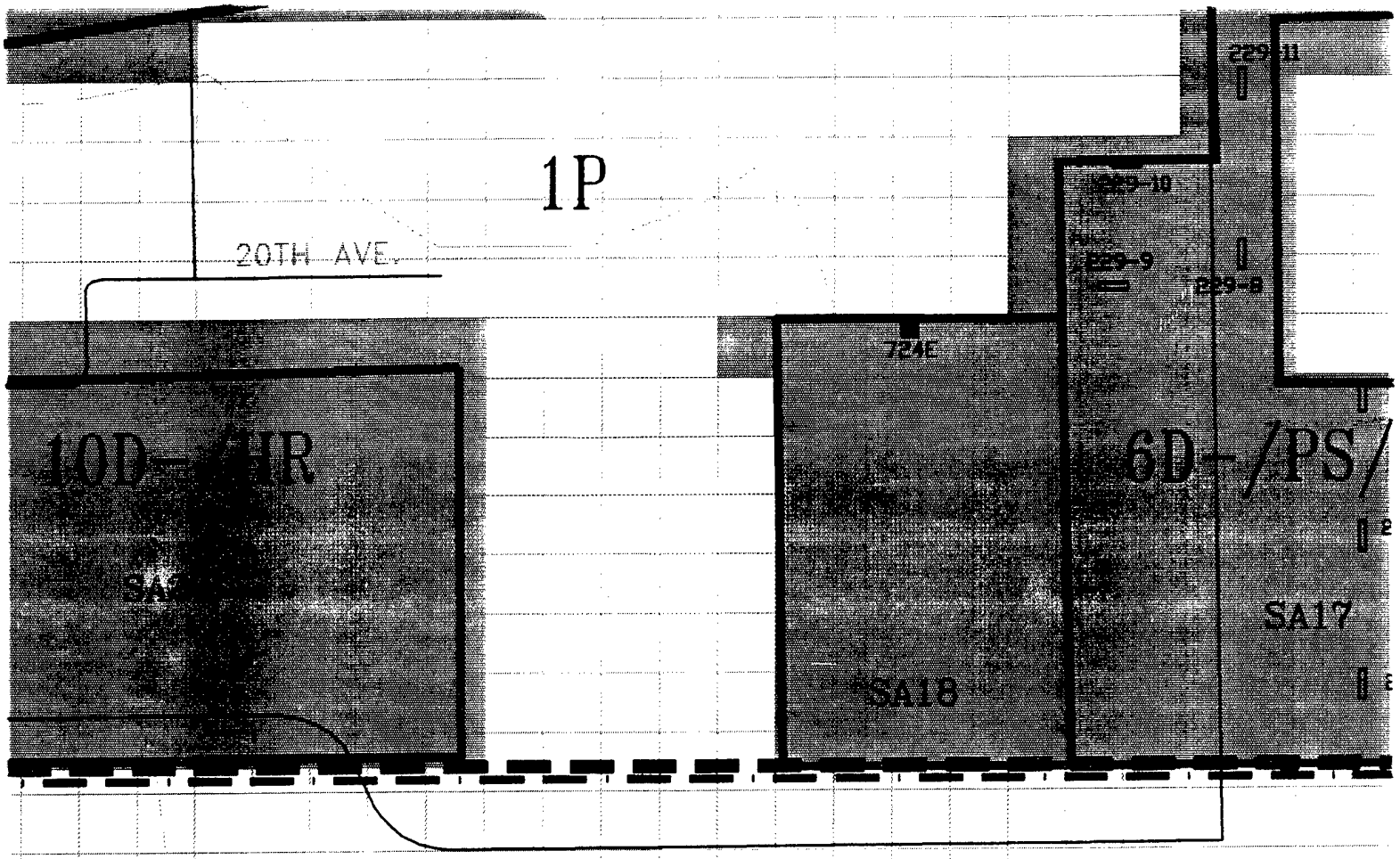

KIMBERLY-CLARK AREA

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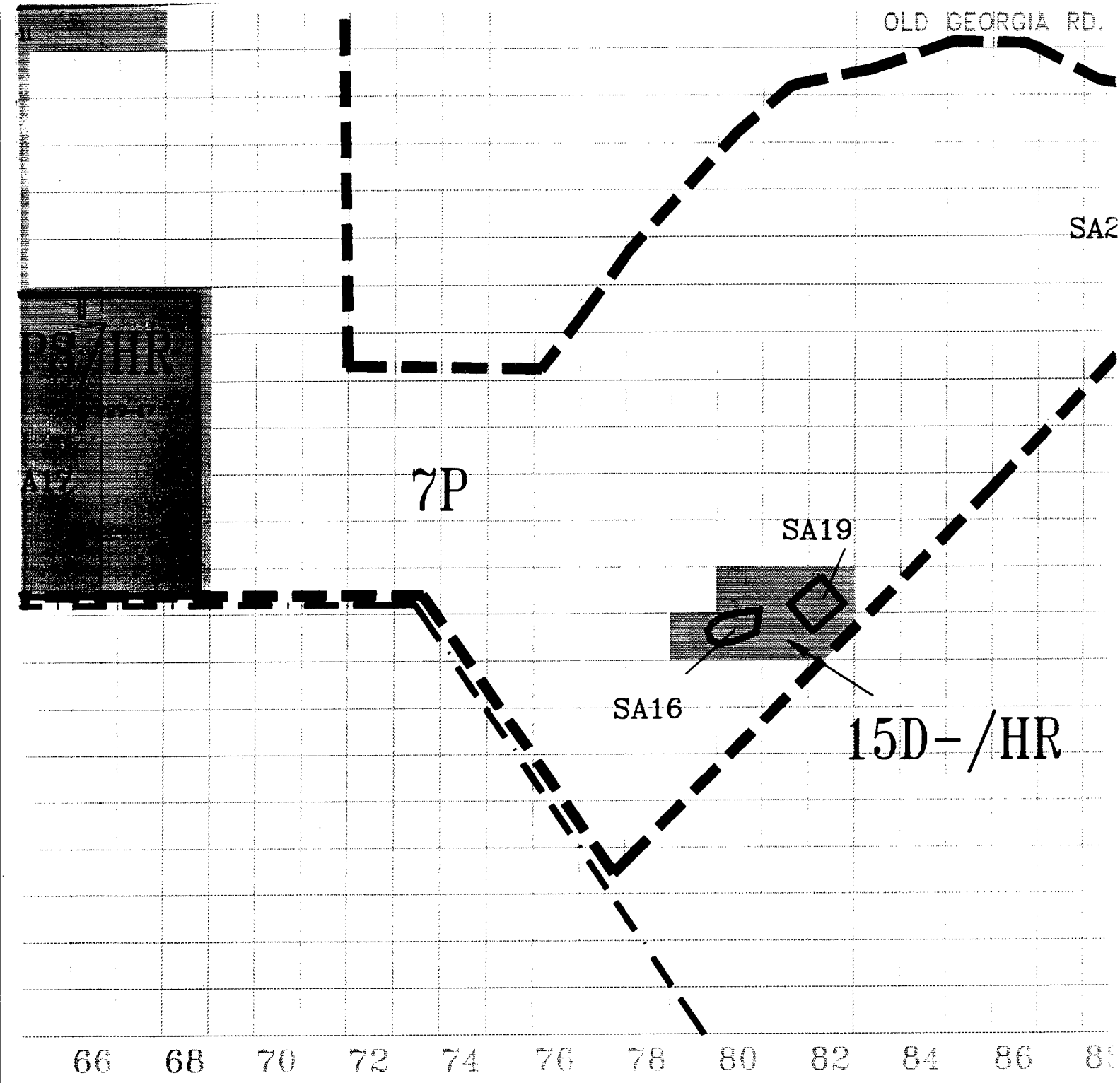
OLD GEORGIA RD.
SA2
7P
SA19
SA16
15D-/HR
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68
70
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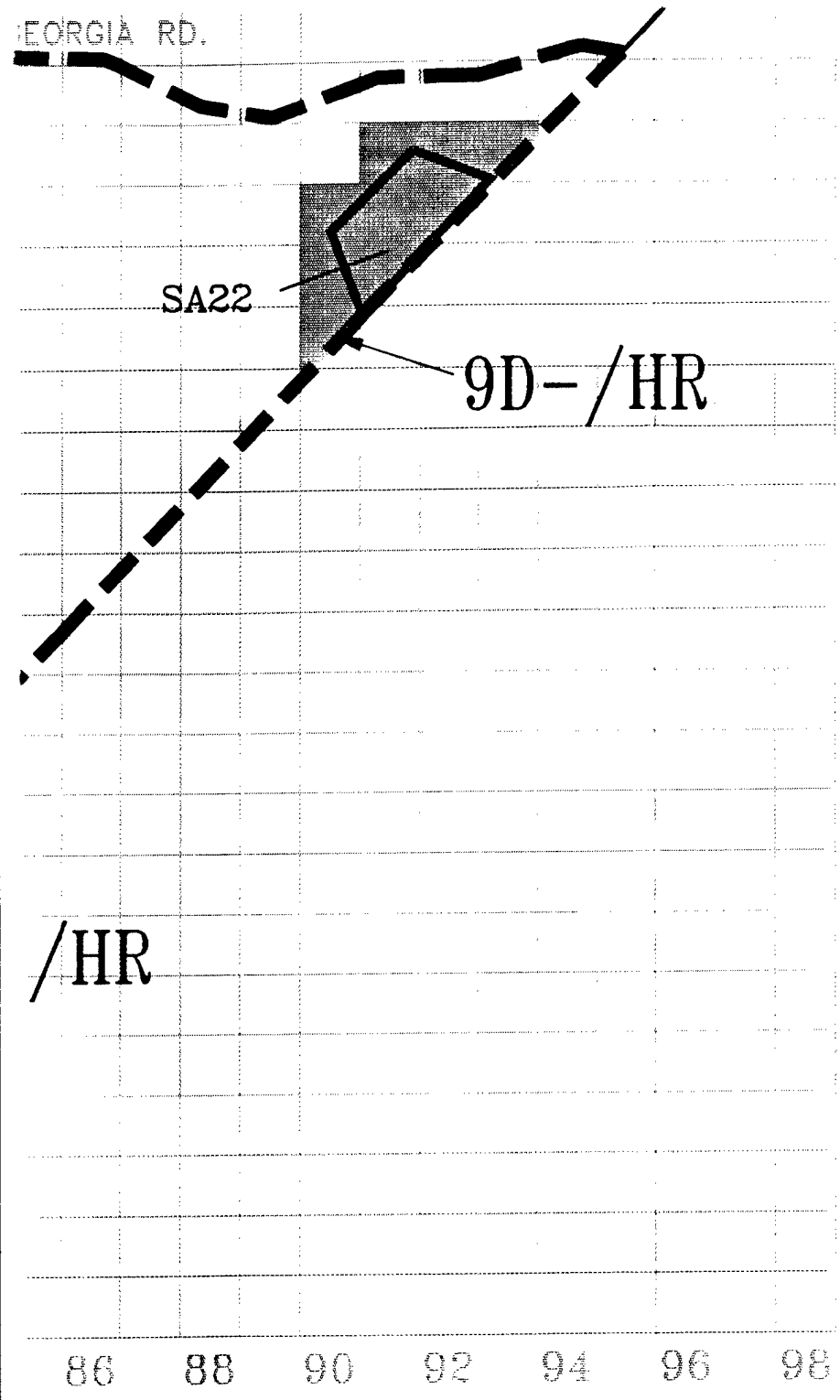
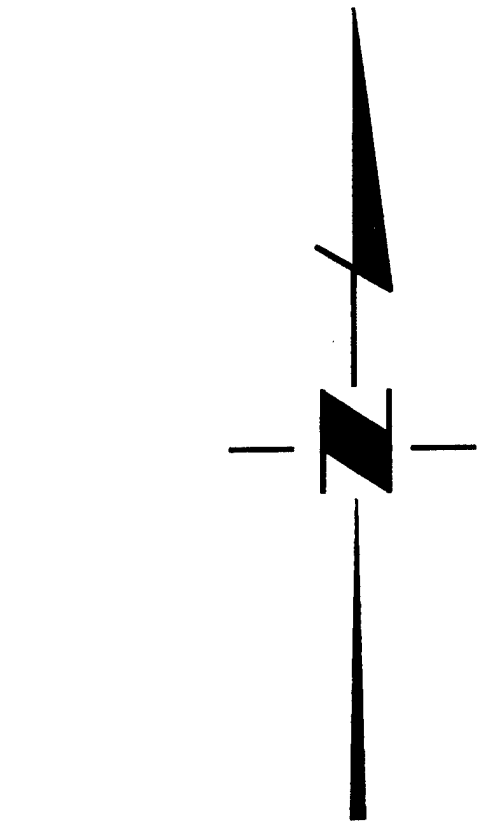
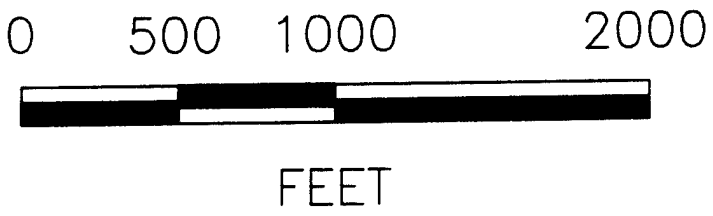
74
76
78
80
82
84
86



0 50



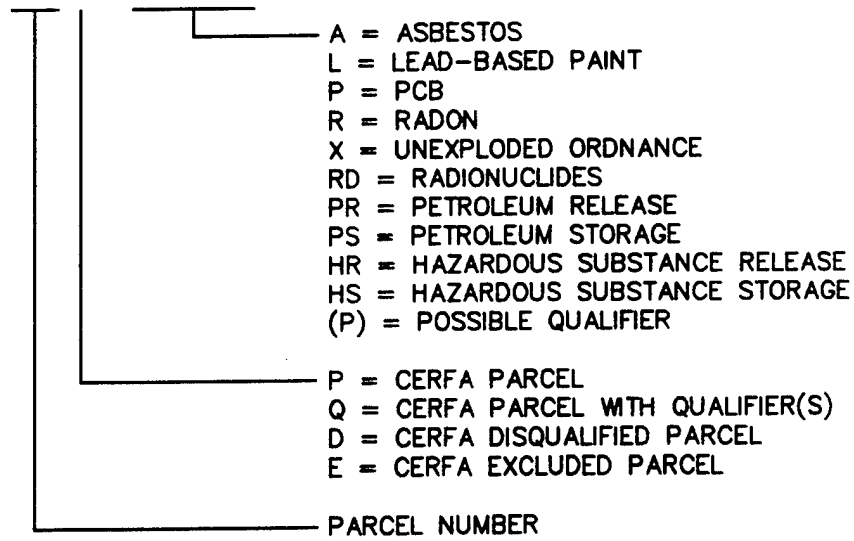

0
500
1000
2000
FEET

Source: CERFA Investigation, April 1994

20 22 24 26 28 30 32 34 36 38 40 42

42 44 46 48 50 52 54 56 58 60 62 64

PARCEL LABEL DEFINITIONS



EASE
RAGE

(S)

84 86 88 90 92 94 96 98

DRAWI
CHECI
TETC

FEET

The Earth Technology Corporation

1420 KING STREET SUITE 600, ALEXANDRIA, VIRGINIA 22314

FIGURE 5-1
PARCEL DESIGNATION MAP
ALABAMA ARMY AMMUNITION PLANT, TALLADEGA COUNTY, ALABAMA

DRAWN BY: MTM, JGC	DESIGNED BY: N/A	SCALE: 1" = 605'
CHECKED BY: CF	APPROVED BY: BY	DATE: 04/14/94
TETC PROJECT NUMBER 931977-02	DRAWING NUMBER SHEET 1 OF 1	REV. NO. 2

FIGURE 5-2
TRACT MAP, ALABAMA ARMY AMMUNITION PLANT, ALABAMA

5-6-81 T/ Outparcels

STAFF HOUSE AREA

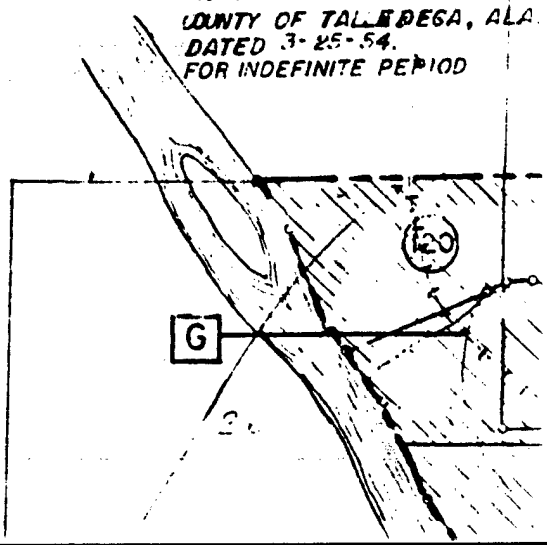
84.54 ACRES REPORTED EXCESS ON STANDARD FORM 118 TO GENERAL SERVICES ADMINISTRAT
WHO CONVEYED BY QUITCLAIM DEEDS AS FOLLOWS:

ACRES	CONVEYED TO	DEED DATED	
.47	CITY OF CHILDERSBURG	31 JULY 1963	1/
1.18	WATER, GAS AND SEWER BOARD OF THE CITY OF CHILDERSBURG, ALA	1 AUG. 1963	2/
0.68	IVAN R. SMITH	19 " "	2/
0.34	LLOYD BUSBY	24 " "	2/
3.80	D. J. BARRETT	12 SEPT	2/
1.11	SADIE E. BARNARD	2 " "	2/
0.37	JACK V. BILLINGSLEY	" " "	2/
0.34	A. L. BLACKERBY & SELENE M. RAMSEY	" " "	2/
0.34	O. S. BURKHALTER	" " "	2/
0.34	E. O. CRAWFORD	" " "	2/
0.34	TOMMY DUVALL	" " "	2/
0.38	DAVID L. EDGEWORTH	" " "	2/
0.42	HUBERT C. HATCHETT	" " "	2/
0.34	CONRAD W. HERNDON, ET UX	" " "	2/
0.37	HARVEY W. ISDELL	" " "	2/
0.34	WILLIAM E. KALLENBACH	" " "	2/
0.34	LOWELL L. MAXWELL	" " "	2/
0.34	MILLARD H. McGUIRE	" " "	2/
0.34	WARD ROGNELSON, JR	" " "	2/
1.06	GLEN LEROY STROZIER	" " "	2/
0.34	RICHARD A. TEBO	" " "	2/
0.34	JULIUS N. WARD	" " "	2/
23.86	B. S. AND C. P. WILSON	" " "	2/
18.98	" " " " "	" " "	2/
21.39	" " " " "	" " "	2/
0.47	ROBERT E. YOUNG	" " "	2/
0.77	W. C. DICK	26 SEPT "	2/
0.34	ROBERT LEE	" " "	2/
0.42	ROBERT S. MATHEWS	" " "	2/
0.50	C. P. AND B. S. WILSON	4 OCT. "	2/
1.10	JAMES COCHRAN	17 " "	2/
4.89	CITY OF CHILDERSBURG	22 " "	2/

1/ RESERVING TO U.S. 10' PERPETUAL EASEMENT FOR ELECTRICAL DISTRIBUTION SYSTEM

2/ RESERVING TO U.S. A 10' PERPETUAL EASEMENT FOR WATER, SEWERAGE AND ELECTRICAL SYSTEMS.

NO. 33-13
ROAD R/W EASEMENT GRANT
COUNTY OF TALLADEGA, ALA.
DATED 3-25-54.
FOR INDEFINITE PERIOD



DMINISTRATION 31 DEC. 1962

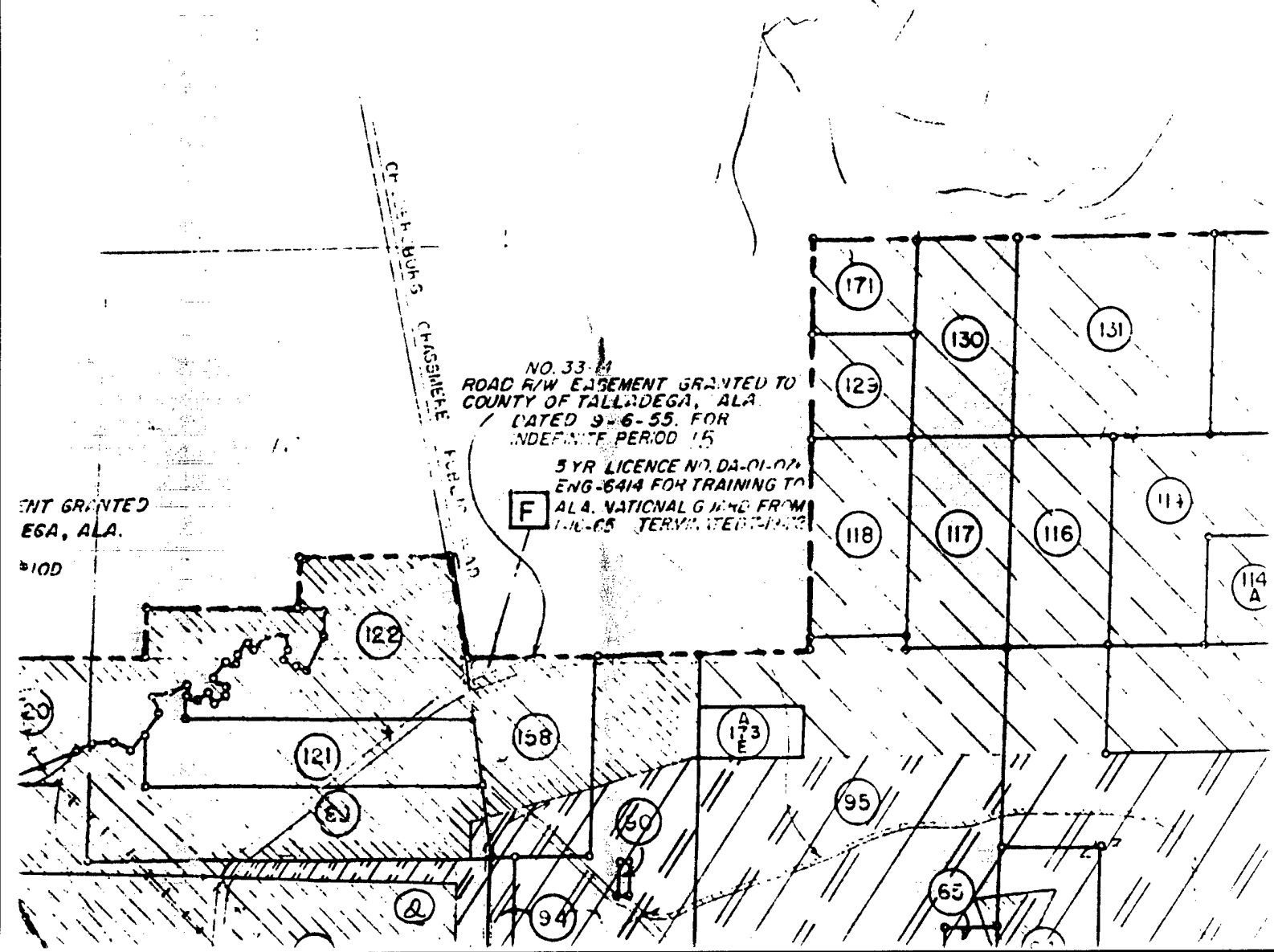
H — 7.21 ACRES REPORTED EXCESS ON STANDARD FORM 11E
I FEB. 1966 (REVISED 26 APRIL 1966) WHO CONVEYED
ET UX BY QUITCLAIM DEED DATED 8 AUG. 1966 RESERV

I — 1.40 ACRES REPORTED EXCESS ON STANDARD FORM
WHO CONVEYED 1.40 ACRES TO KIMBERLY-CLARK CORI
TO THE U.S. AN EASEMENT FOR ANY REQUIRED UTIL

J — 91.00 ACRES REPORTED EXCESS ON SF 118 TO GENEI
ON 10-3-73, WHO CONVEYED 73.50 ACRES TO COU
BY QUITCLAIM DATED 4-25-79.

1354.30 ACRES TO KIMBERLY CLARK CORP BY QUITC

EXCESS LAND, 2803.00 ACRES.

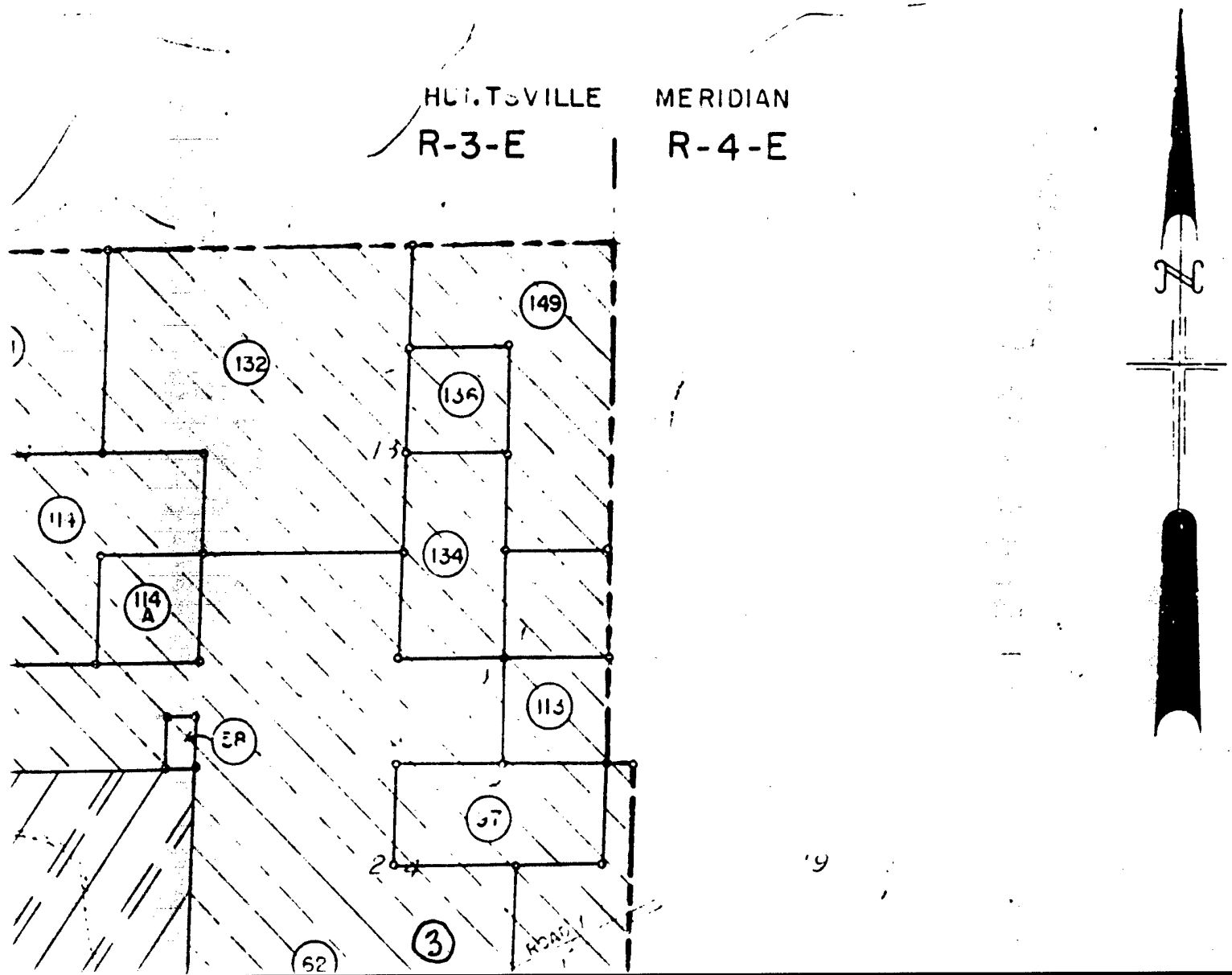


RD FORM 118 TO GENERAL SERVICES ADMINISTRATION
CONVEYED 7.21 ACRES TO ROBERT B. SIMMONS,
)66 RESERVING TO THE U.S. PERPETUAL WATER & SEWAGE ESMTS.

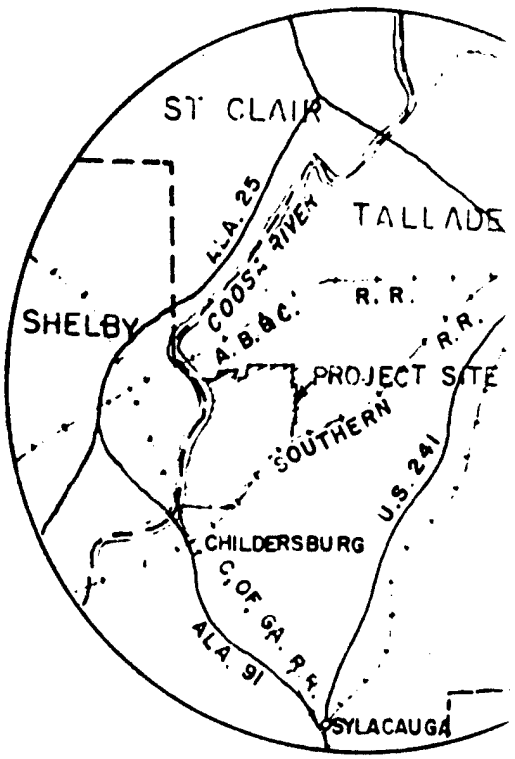
ARD FORM 118 TO GENERAL SERVICES ADMINISTRATION 29 APRIL 1966
CLARK CORPORATION BY QUITCLAIM DEED DATED 20 JULY 1966 RESERVING
UIRED UTILITY LINES.

3 TO GENERAL SERVICES ADMINISTRATION
:S TO COUNTY OF TALLADEGA

? BY QUITCLAIM DATED 8-12-77



STATE INDEX



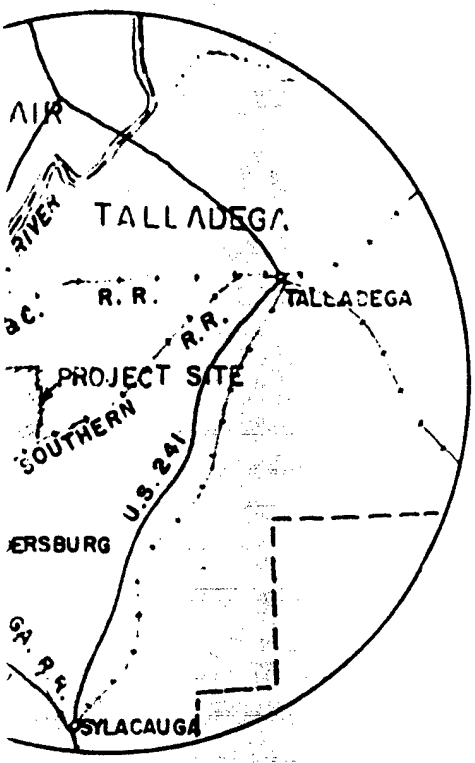
VICINITY MAP

0 10

SCALE IN MILES

N

TRACT NO.	ACQUISITION LAND OWNER
7	TALLADEGA COUNTY, ET AL.
8	C. A. KILLOUGH, ET AL.
9	MRS. PAULINE M. CLIETT, ET AL.
10	ROBERT S. LIMBAUGH, ET UX.
11	MRS. NETTIE GOWEN, TRUSTEE
12	ADA KEITH, ET AL.
13	MARGARET HAGAN
14	J. J. HIGHTOWER, ET AL.
15	ADA KEITH, ET AL.
16	B. F. NICHOLLS, ET UX.
22	CORELLA SWAIN, ET AL.
23	NILLIE SPARKS, ET AL.
25	GEORGE W. JONES, ET UX.
26	W. F. DONAHOO, ET UX.
27	SADIE & JOE LEE
27-A	JAMES LEE
27-B	KIETH COMMUNITY CLUB
29	T. H. RUSSELL, ET UX.
30	GEORGE W. JONES, ET UX.
31	MRS. BEN (NANCY) REYNOLDS ESTATE
32	MOUNT OLIVE BAPTIST CHURCH, TRUSTEES
33	JOHN EDDIE REYNOLDS, ET UX.



INITY MAP

10 20

LE IN MILES

ACQUISITION AUTHORIZATION

RE-D Unnumbered	DATED 12-31-40
RE-D Unnumbered	DATED 3-10-41
RE-D 3015	DATED 5-4-44
RE-D 6345	DATED 9-23-55
RE-D 7971	DATED 5-23-72

(TYPE)

PRO.

STATE

COUNT

DIVISIO

DISTRI

ARMY

CQUISITION TRACT REGISTER

OWNER	ACREAGE FEE	ACREAGE EASEMENT	REMARKS
	18.10		D/T FILED 2-11-42
	660.00		" 4-19-41
AL.	274.93		DEED DATED 9-24-41 **
K.	107.72		" 10-30-41 **
TEE	3.78		" 5-1-42
	48.30		D/T FILED 5-2-41
	100.00		" 4-19-41
	130.00		" " "
	327.00		
	213.70		DEED DATED 8-25-41 **
	40.00		D/T FILED 4-19-41
	76.85		"
	78.00		DEED DATED 10-22-41
	78.00		" " 2-20-42
	65.00		D/T FILED 4-19-41
	58.00		" " "
	2.00		" " "
	140.00		" " "
	140.14		DEEDS DATED 10-27-41 & 10-4-44
ESTATE	326.00		D/T FILED 4-19-41
H, TRUSTEES	5.00		
K.	144.00		(5) " "

RAILRO

STATE

FEDERA

AIRLINE

1/ TOT

(TYPE) FINAL

PROJECT OWNERSHIP MAP

STATE ALABAMA

COUNTY TALLADEGA

DIVISION SOUTH ATLANTIC

DISTRICT MOBILE

ARMY AREA SECOND

TION AUTHORIZATION

ered DATED 12-31-40

ered DATED 3-10-41

DATED 5-4-44

DATED 9-23-55

DATED 5-23-72

LOCATION OF PROJECT

1 MILES N OF CHILDERSBURG

12 MILES SW OF TALLADEGA

REMARKS

1-42

9-41

24-41 **

30-41 **

1-42

2-41

19 41

"

25-41 **

19-41

"

22-41

20-42

10-41

"

"

27-41 & 10-4-44

19-41

"

"

"

TRANSPORTATION FACILITIES

RAILROADS C. of GA. A.B.&C. SOU.

STATE ROADS 25, 9

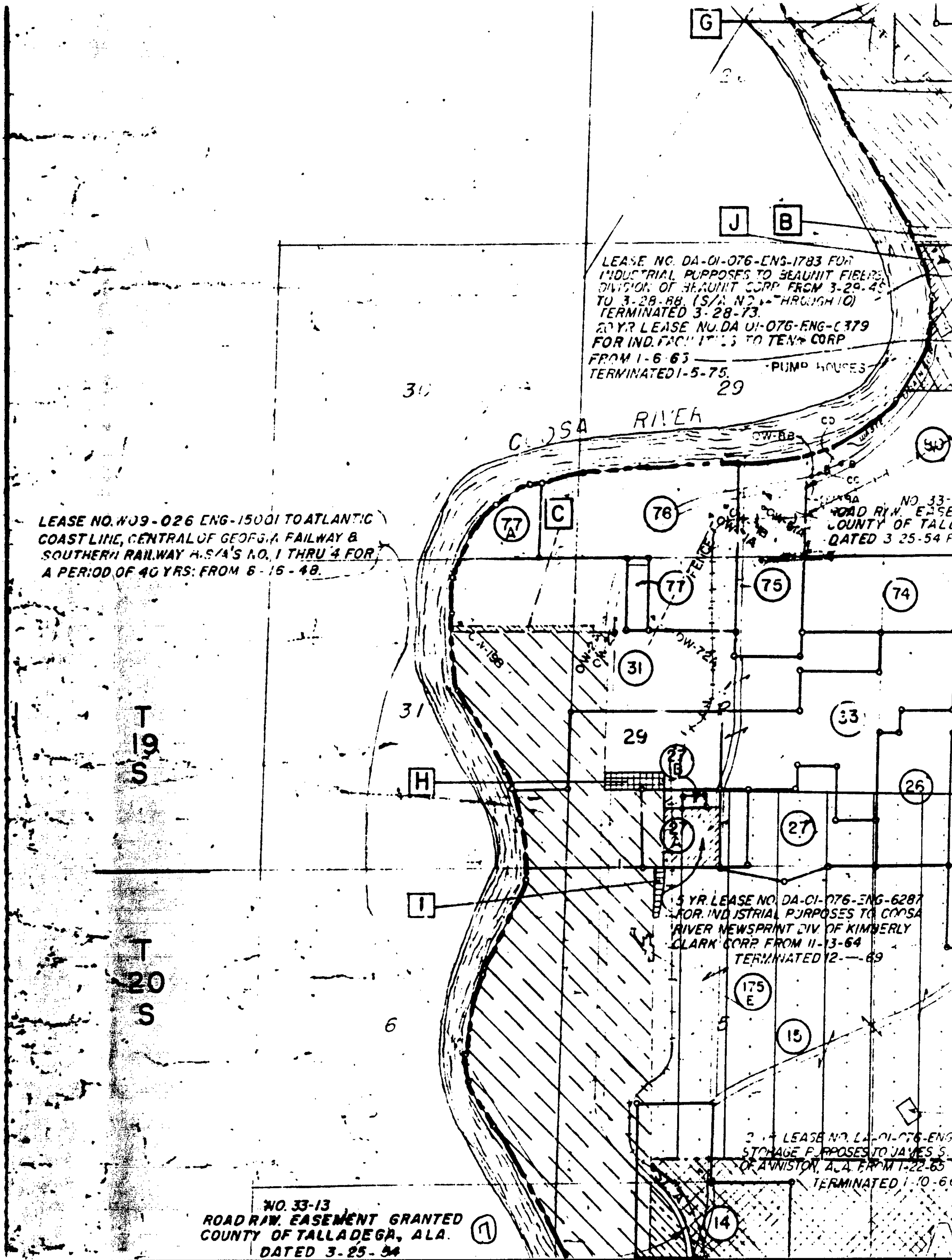
FEDERAL ROADS 241

AIRLINES

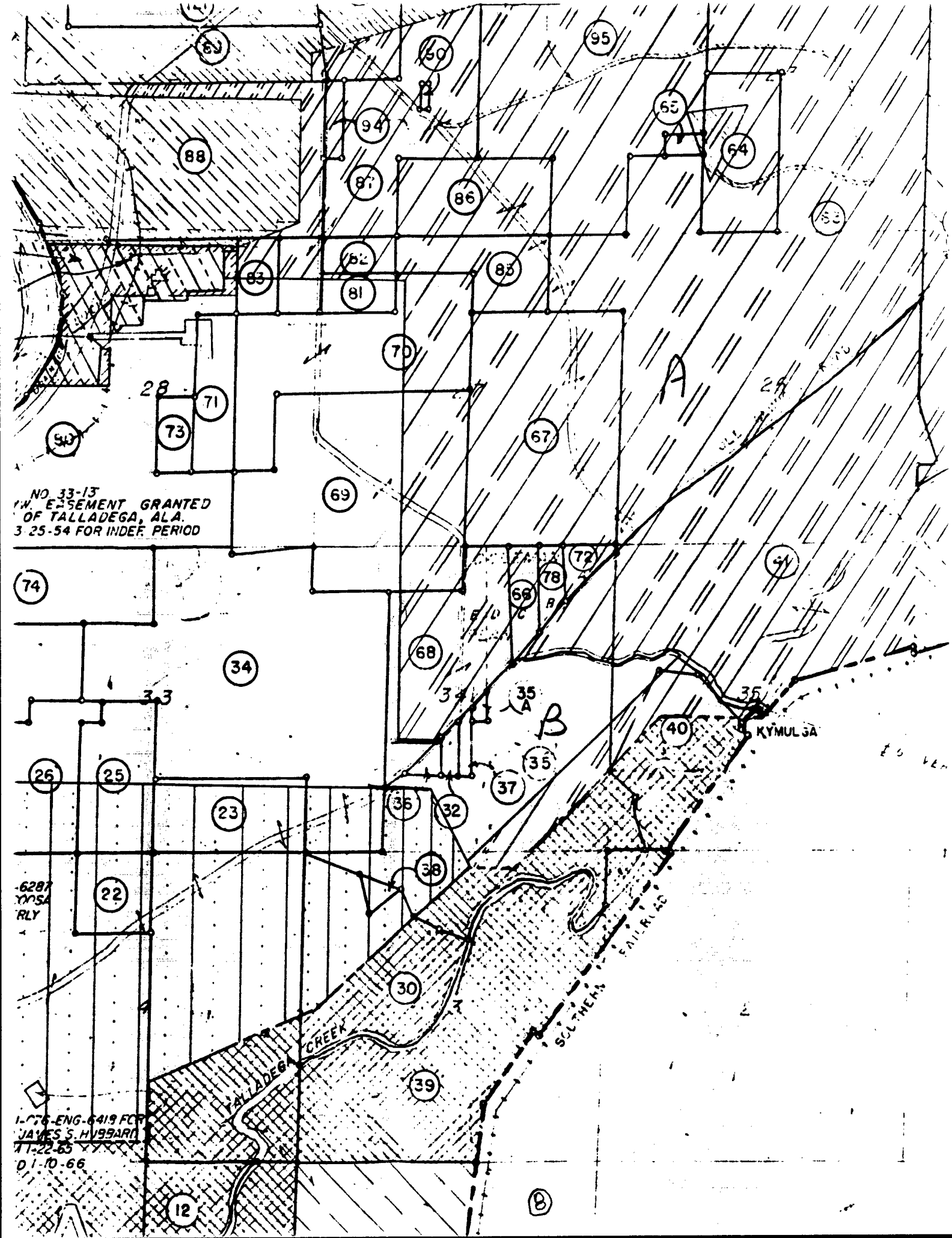
AUDITED ACQUISITION

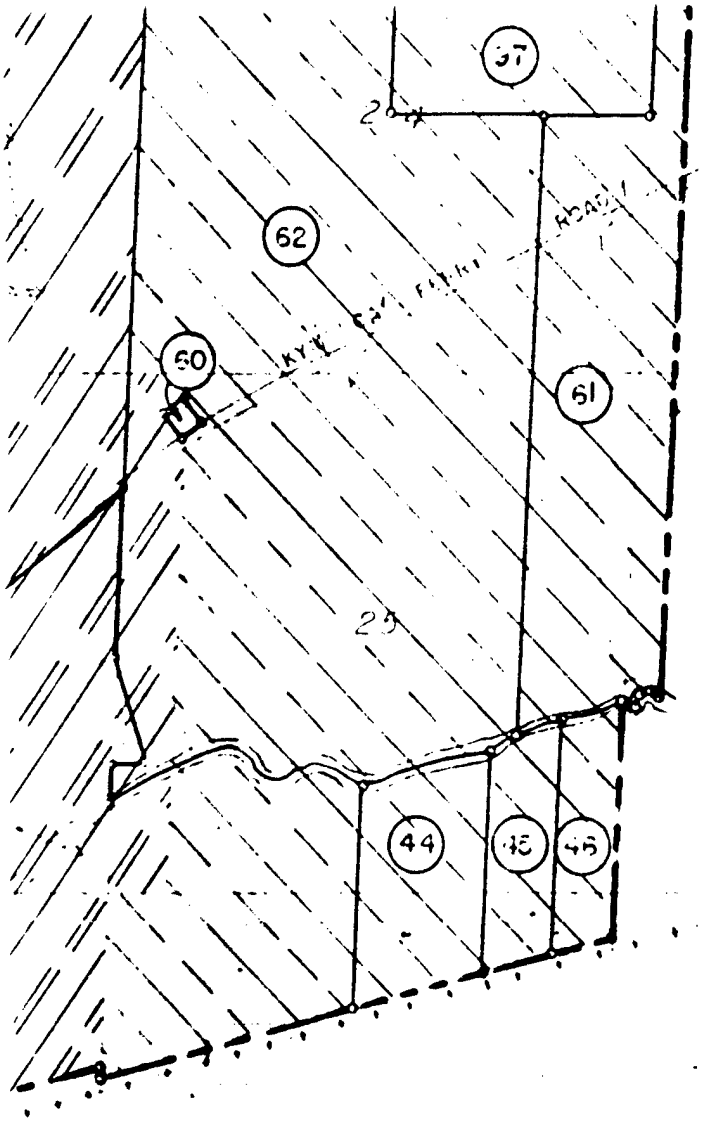
1/ TOTAL ACRES ACQUIRED 13,233.33

(6)



G
J
B
LEASE NO. DA-01-076-ENG-1783 FOR INDUSTRIAL PURPOSES TO BEAUNIT FIBERS DIVISION OF BEAUNIT CORP FROM 3-29-48 TO 3-28-88. (S/A NO 1 THROUGH 10) TERMINATED 3-28-73.
20 YR LEASE NO. DA 01-076-ENG-C379 FOR IND. FACILITIES TO TENN CORP FROM 1-6-63 TERMINATED 1-5-75.
PUMP HOUSES
30
29
COOSA RIVER
LEASE NO. W09-026 ENG-15001 TO ATLANTIC COAST LINE, CENTRAL OF GEORGIA RAILWAY & SOUTHERN RAILWAY S/A'S NO. 1 THRU 4 FOR A PERIOD OF 40 YRS: FROM 6-16-48.
C
77 A
76
NO. 33-
ROAD R/W. EASE
COUNTY OF TALL
DATED 3-25-54
77
75
74
31
31
33
29
26
27
27 B
27 A
H
I
T 19 S
T 20 S
5 YR. LEASE NO. DA-01-076-ENG-6287 FOR INDUSTRIAL PURPOSES TO COOSA RIVER NEWSPRINT DIV. OF KIMBERLY CLARK CORP FROM 11-13-64 TERMINATED 12-—-69
175 E
6
5
15
LEASE NO. DA-01-076-ENG- STORAGE PURPOSES TO JAMES S. OF ANNISTON, ALA. FROM 1-22-65 TERMINATED 1-10-66
NO. 33-13
ROAD R/W. EASEMENT GRANTED COUNTY OF TALLADEGA, ALA. DATED 3-25-54
7
14


NO. 33-13
W. EASEMENT GRANTED
OF TALLADEGA, ALA.
3-25-54 FOR INDEF. PERIOD
KYMULGA
TALLADEGA CREEK
SOUTHERN RAILROAD
I-076-ENG-6419 FCR
JAMES S. HUBBARD
11-22-65
01-10-66



Exclusive Jurisdiction ceded U.S.A. 12-22-42.
Effected 1-30-43 on 13,214.73 Acres Fee Lar
Exclusive Jurisdiction over 2,636.67 Acres ha
Retroceded to State due to Disposals.

ALL ROADS WITHIN RESERVATION CLOSED BY RESOLUTION O
COURT OF COUNTY COMMISSIONERS OF TALLADEGA COUNTY
DATED 4-14-4..

The boundary of this installation was compiled from Deed Descriptions & G.L.O. Plats.

27-A	JAMES LEE
27-B	KIETH COMMUNITY CLUB
29	T. B. RUSSELL, ET UX.
30	GEORGE W. JONES, ET UX
31	MRS. BEN (NANCY) REYNOLDS ESTATE
32	MOUNT OLIVE BAPTIST CHURCH, TRUSTEES
33	JOHN EDDIE REYNOLDS, ET UX.
34	WILLIE COLEMAN HEIRS
35	MRS T. B. RUSSELL, ET AL.
35-A	GARFIELD COKLEY
36	STATE OF ALABAMA
37	ELECTOR SPARKS, ET UX.
38	SIDNEY SAMUELS, ET UX
39	ROGER ap C JONES, ET UX.
40	W.R. HIGHTOWER, ET UX.
41	J. N. HEARD, ET UX.
44	ADELIA ORR ESTATE
45	FRANCES E. NORTON, ET VIR.
46	JULIA VAUGHN, ET VIR.
58	TR. OF THE AMERICAN MISSIONARY ASSOCIATION
60	DEACONS, KINGSTON BAPTIST CHURCH
61	R. R. COOK ESTATE
62	HERNDON H. COOK, ET UX.
63	LULA N. WHITSON
64	JESSIE HEATH, ET AL.
65	SAM HURT, ET UX.
66	WILLIAM BROWN, ET AL.
67	N.F. KILLOUGH, ET AL.
68	JOE & ALICE COLEMAN HEIRS
69	E. J. CALDWELL, ET UX.
70	N. F. DONAHOO, ET UX.
71	AARON FUNDERBURG
72	ZACK T. GARRETT, ET UX.
73	BEN L. REYNOLDS, ET UX.
74	ADA C. BOWMAN
75	BEN L. REYNOLDS, ET UX.
76	WALTER REYNOLDS, ET UX.
77	JENNIE M. STOREY, ET AL.
77-A	JENNIE M. STOREY, ET AL.
78	BEN COLEMAN, ET UX.
80	ESTATE OF H.F. HENDERSON
81	MARIAH SWAIN
82	EDDIE HEATH, ET UX.
83	MANNIE HEATH, ET VIR.
85	ANNIE E. VAUGHN
86	HENRY SMITH, ET UX.
87	ENOCH CALHOUN
88	OLIVER J. ALLEN, ET UX
89	NAPOLEON CALHOUN, ET UX.
90	TRS. OF COLORED M.E. CHURCH (STAMPS CHAPEL)
94	EFFIE WYNN
95	ESTATE OF H.F. HENDERSON
97	ANNIE L. COOK, ET AL.
113	GEORGE R. SPRAGGINS, ET UX.
114	MARY LOU REYNOLDS ESTATE
114-A	MARY LOU REYNOLDS ESTATE
116	MRS. ETHEL R. COOK
117	HARRISON ESTATE (A CORP.)
118	JAMES CALHOUN, ET AL.
120	BETTIE J. MORRIS
121	J. E. GROCE, ET UX.
122	THOMAS E. GARRETT, ET UX.
129	ROBERT BAKER, ET AL.

UNNUMBERED &
RE-D 3015

A. 12-22-42.
Acres Fee Land.
.67 Acres has
als.

Y RESOLUTION OF
EGA COUNTY.

mpiled from

58.00	" " "	
2.00	" " "	
140.00	" " "	
140.14	DEEDS DATED 10-27-41 & 10-4-44	
326.00	D/T FILED 4-19-41	
5.00	" " "	
144.00	" " "	
401.32	" " "	
373.00	" " "	
2.00	" " "	
5.00	" " "	
5.00	" " "	
5.00	" " "	
308.00	" " "	
109.00	DEED DATED 2-18-42	
779.00	D/T FILED 4-19-41	
75.00	" " "	
37.00	" " "	
39.00	DEED DATED 12-16-41	
5.00	D/T FILED 4-19-41	
2.00	" " "	
204.00	" " "	
101.00	" " "	
740.00	" " "	
80.00	" " "	
5.00	" " "	
21.60	" " "	
240.00	" " "	
122.00	" " 4-19-41	
269.00	" " "	
160.00	DEED DATED 12-5-41	
40.00	D/T FILED	
10.50	" " 4-19-41	
20.00	" " "	
120.00	" " "	
91.00	" " "	
190.00	" " "	
11.93	FORMERLY SHOWN AS PART OF TR. NO. 77 IN D/T NO. 1 FILED 4-19-41 **	
28.46	FORMERLY SHOWN AS PART OF TR. NO. 77 IN D/T NO. 1. **	
10.50	D/T FILED 4-19-41	
428.00	" " "	
20.00	" " 4-19-41	
20.00	" " "	
20.00	" " "	
60.00	" " "	
80.00	DEED DATED 12-17-41	
209.00	D/T FILED	
402.00	" " "	
124.00	" " "	
.00	" " "	
10.00	" " "	
400.00	" " "	
80.00	" " "	
40.00	DEED DATED 10-29-41	
120.00	D/T FILED 4-19-41	
40.00	" " "	
80.00	" " "	
80.00	" " "	
75.00	" " "	
130.00	" " "	
100.00	" " "	
115.00	" " "	
40.00	" " 4-19-41	

AL
ACQ

1/ TOTAL ACRES AC

ACRES FEE

ACRES TRANSFERRE

ACRES LEASED

ACRES LESSER INTE
Includes 1.57 Ac. Ease

1/ Totals do not include
Reacquired.

DIS

1/ TOTAL ACRES DIS

ACRES SOLD (FEE)

ACRES REASSIGNED

ACRES TO G.S.A. (

ACRES LEASES TERM

ACRES LESSER INT'S

ACRES TO F.C.A.

LE

NOTE: USE SYMBOL
DEPT. BASIC FIELD
INCL. EXCEPT

RESERVATION LINE

SECTION LINE

TOWNSHIP LINE

COUNTY LINE

AVIGATION EASEMENT

TRACT NUMBER

8 10-4-44

AUDITED
ACQUISITION

1/ TOTAL ACRES ACQUIRED 13,233.33

ACRES FEE 13,232.83

ACRES TRANSFERRED

ACRES LEASED

ACRES LESSER INTERESTS (EASE.) *23.07

* Includes 1.57 Ac. Easement Reserved in Fee Disposals.

1/ Totals do not include 22.57 Acres Disposed of and Reacquired.

DISPOSAL

1/ TOTAL ACRES DISPOSED OF 6,798.79

ACRES SOLD (FEE) 889.90

ACRES REASSIGNED (FEE) 637.11

ACRES TO G. S. A. (FEE.) 1,883.75

ACRES LEASES TERMINATED

ACRES LESSER INT'S. TERM.

ACRES TO F. C. A. (FEE) 3,410.60

TR. NO. 77 IN D/T NO. 1. FILED 4-19-41 **
TR. NO. 77 IN D/T NO. 1. **

LEGEND

NOTE: USE SYMBOLS FROM FM-21-30 (WAR DEPT. BASIC FIELD MANUAL) PAGES 21 TO 27 INCL. EXCEPT

RESERVATION LINE

SECTION LINE

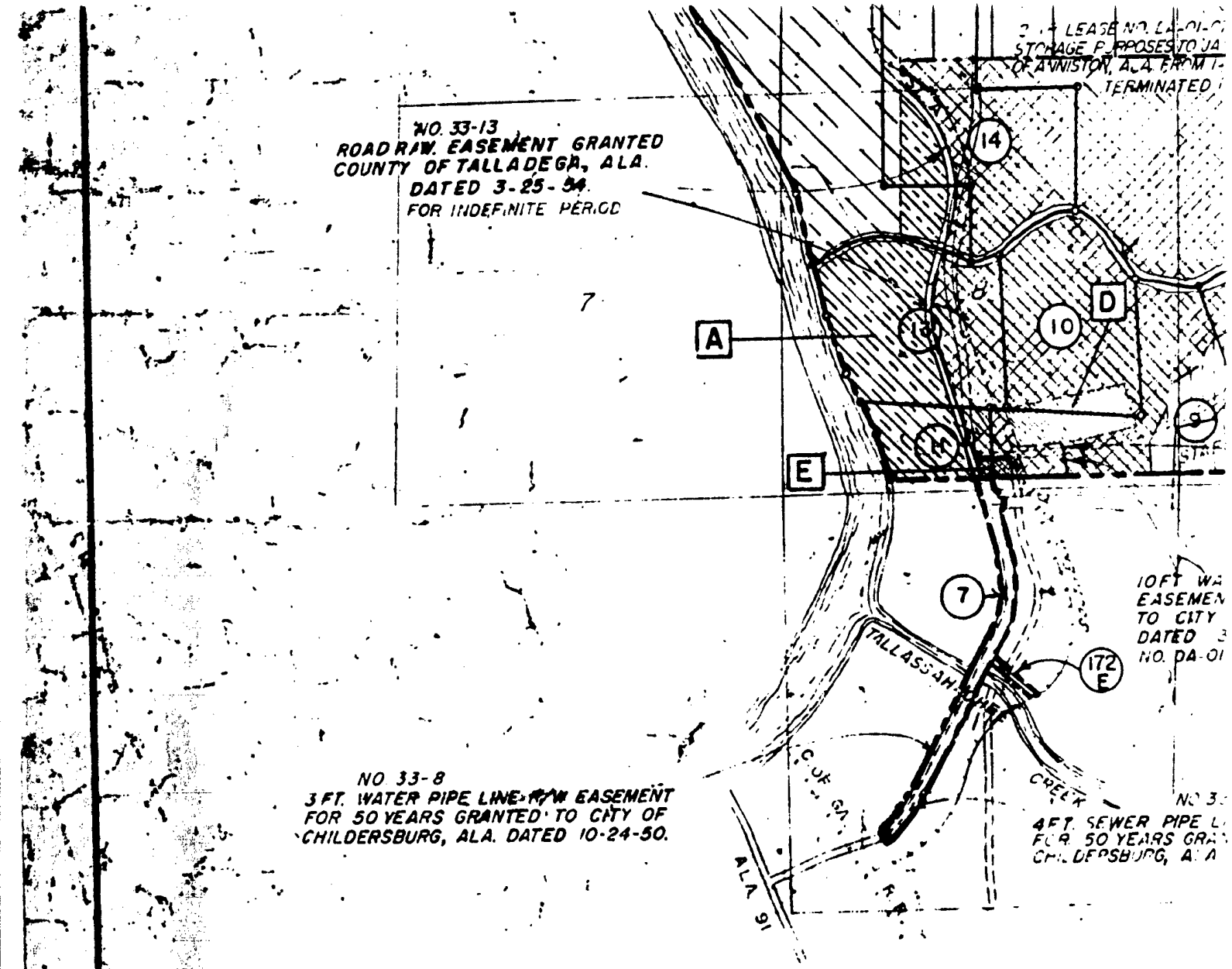
TOWNSHIP LINE

COUNTY LINE

AVIGATION EASEMENTS

(12)

TRACT NUMBER



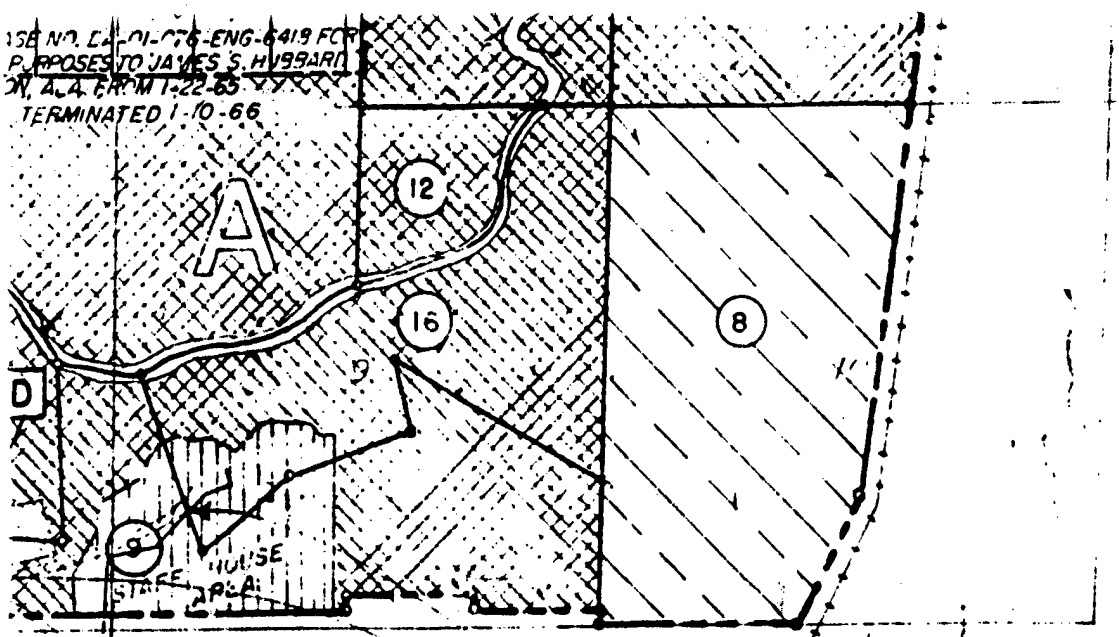
3410.60 ACRES ACCOUNTABILITY ASSUMED BY FA

A

95.80 ACRES DECLARED TO G.S.A. 5-1-50 (As excess)
95.80 ACRES CONVEYED TO COOSA RIVER NEWSPRINT C
RESERVING TO THE U.S. A PERPETUAL DRAINAGE R/
TO FLOOD & IMPOUND WATER BELOW ELEVATION 40

615.00 ACRES CONVEYED TO COOSA RIVER NEWSPRI
RESERVING TO THE U.S. PERPETUAL EASEMENTS FOR WATER PUMP
LINE, RAILROAD SPUR TRACK, AS: BASIN AND DRAINAGE DITCHES
TO REGULATE ALL MEANS OF INGRESS & EGRESS, RIGHT TO CONSTRU
AND IMPOUND WATER BELOW ELEVATION 408 FEET M.S.L.

271.00 ACRES CONVEYED TO THE AMERICAN DEVELOPMENT C
RESERVING TO THE U.S. A PERPETUAL EASEMENT FOR RAILROAD AND SPUR
RIGHT TO FLOOD AND IMPOUND WATER BELOW ELEVATION 408 FEET ABO



SE NO. DA-01-076-ENG-6419 FOR
PURPOSES TO JAMES S. HUBBARD
ON, ALA. ERM 1-22-65
TERMINATED 1-10-66

10 FT. GAS PIPE LINE R/W EASEMENT (UNNUMBERED)
FOR 50 YEARS GRANTED TO CITY OF
CHILDERSBURG, ALA. DATED 9-20-55.

10 FT WATER & GAS PIPE LINE R/W
EASEMENT FOR 50 YEARS GRANTED
TO CITY OF CHILDERSBURG, ALA.
DATED 3-15-61.
NO. DA-01-076-ENG-5035

50 FT. ROAD R/W EASEMENT FOR INDEFINITE
PERIOD TO THE BOARD OF COUNTY COMMISSIONERS,
TALLADEGA COUNTY, ALA. DATED 10-2-6
NO. DA-01-076-ENG-5309

NO 33 9
WER PIPE LINE R/W EASEMENT
YEARS GRANTED TO CITY OF
SBURG, ALA. DATED 10-24-50.

A ,54
14 DE
AND
DATE

20.0

247.0

B 25.8
TO
OVE

C 2.75
TO

D 24.0
TO

BY FARM CREDIT ADM., 11-20-45.

(except G.S.A. FORM 30)

SPRINT CO. BY QUIT CLAIM DEED DATED 2-16-51 BY G.S.A.

E 2.20
D.

AGE R/W EASEMENT OVER 1.40 ACRES & PERMANENT RIGHT
ION 408 FEET ABOVE M.S.L.

EWSPRINT CO. BY QUIT CLAIM DEED DATED 1-16-48.

F 3.9

ER PUMPING PLANT, SEWAGE DISPOSAL PLANT, TELEPHONE
DITCHES, PERPETUAL RIGHT TO USE "A" STREET AND 3RD AVENUE,
CONSTRUCT UTILITY FACILITIES AND PERMANENT RIGHT TO FLOOD

MENT CO. BY QUIT CLAIM DEED DATED 4-26-48

G 637.1
10

AND SPUR TRACKS, RIGHT TO REGULATE INGRESS AND EGRESS, PERMANENT
FEET ABOVE M.S.L.

1,547.00 ACRES REPORTED EXCESS ON STANDARD FORM 118 TO GENERAL SERVICE
14 DEC. 1961 WHO CONVEYED 127.52 ACRES TO CITY OF CHILDERSBURG BY QUITCLAIM
AND 1,300.00 ACRES TO JAMES S. HUBBARD BY QUITCLAIM DEED DATED 12-23-63 &
DATED 8-14-73. 119.48 ACRES FEE, CUSTODY & ACCOUNTABILITY ASSUMED BY GSA IN

247.00 ACRES REPORTED EXCESS ON STANDARD FORM 118 TO GENERAL SERVICES A
247.00 ACRES WITHDRAWN FROM EXCESS ON STANDARD FORM 118 ON 17 MAR

25.85 ACRES REPORTED EXCESS STANDARD FORM NO. 118 TO GENERAL SERVICE
TO BEAUNIT MILLS, INC. BY QUITCLAIM DEED DATED 5 MARCH 1969, RESERVI
OVER 0.17 ACRES. & PERMANENT RIGHT TO FLOOD & IMPOUND WATER BELOW

2.75 ACRES REPORTED EXCESS STANDARD FORM NO. 118 TO GENERAL SERVICE
TO ALABAMA POWER COMPANY BY QUIT CLAIM DEED DATED 23 MARCH 195

24.00 ACRES REPORTED EXCESS STANDARD FORM NO. 118 TO GENERAL SERVI
TO TALLADEGA COUNTY BOARD OF EDUCATION BY QUITCLAIM

2.20 ACRES REPORTED EXCESS STANDARD FORM NO. 118 TO GENERAL SE
D. J. BARRETT BY QUITCLAIM DEED DATED 10 MARCH 1960.

3.90 ACRES FEE CONVEYED TO B. B. PARKS BY QUITCLAIM DEED DATED

637.11 ACRES REASSIGNED TO U.S. AIR OUTDOOR MULTIPLE DRILL AREA, CHILDERSBURG
10 APRIL 1961

	117	HARRISON ESTATE (A CORP.)
	118	JAMES CALHOUN, ET AL.
	120	BETTIE J. MORRIS
	121	J. E. GROCE, ET UX.
	122	THOMAS E. GARRETT, ET UX.
	129	ROBERT BAKER, ET AL.
	130	NOY DATES, ET UX.
	131	T. L. COOK, ET AL.
	132	HARRISON ESTATE (A CORP.)
	134	ESTATE OF MINERVA GARRETT MORRISS
	136	ALEX WILKERSON, ET AL.
	149	WESLEY WELCH, ET UX.
	158	GEORGE W. JONES, ET AL.
	171	ALABAMA MINERAL LAND CO.
	172-E	B. C. GOODPASTURE, ET UX.
*	A-173-E	T. MACON DONAHOO, ET UX
	175-E	KIMBERLY CLARK CORPORATIO

RE-D 6345

RE D 7971

ERAL SERVICES ADMINISTRATION
S BY QUITCLAIM DEEDS DATED 7-31-63 & 10-7-63
ATED 12-23-63 & CORRECTIONAL QUITCLAIM DEED
JMED BY GSA IN LETTER DATED 10-1-64.

* REACQUISITION OF A PART OF THAT PART OF FEE TR
TOTAL ACRES ACQUIRED AND DISPOSED OF.
** ACREAGE ADJUSTED DUE TO DISPOSAL ACTIONS.

AL SERVICES ADMINISTRATION 14 MARCH 1963 (REVISED 11 APRIL 1966)
8 ON 17 MARCH 1967.

ERAL SERVICES ADMINISTRATION 20 FEB 1958, WHO CONVEYED 25.85 ACRES
959, RESERVING TO THE U.S. A PERPETUAL RAILROAD R/W EASEMENT
WATER BELOW ELEVATION 408 FEET ABOVE M.S.L.

ERAL SERVICES ADMINISTRATION 8 JAN 1958 WHO CONVEYED 2.75 ACRES
5 MARCH 1959.

ENERAL SERVICES ADMINISTRATION 28 MAY 1958. 24.00 AC. CONVEYED BY DEPT OF I
ITCLAIM DEED DATED 19 MARCH 1959.

ENERAL SERVICES ADMINISTRATION 28 OCT 1958 WHO CONVEYED 2.20 ACRE

DEED DATED 27 NOV. 1958.

HILDERSBURG, ALA. EFFECTIVE

MICROFILMED	DATE AUDIT APPROVED	DATE	REVISI
M	5-12-80	4-29-80	DUE TO SUPPLEMENTAL AUDIT
M	8-28-73	3-23-73	DUE TO SUPPLEMENTAL AUDIT
M	8-26-70	4-24-70	DUE TO SUPPLEMENTAL AUDIT
	7-1-66	5-2-66	SUPPLEMENTAL AUDIT

AL.	75.00		" "
	130.00		" "
	100.00		" "
ET UX.	115.00		" "
	40.00		" " 4-19-41
	80.00		" " "
	160.00		" " "
A CORP.)	320.00		" " "
TT MORRISS	80.00		" " "
	40.00		" " "
UX.	160.00		" " 4-19-41
AL.	89.00		DEED DATED 9-13-41
) CO.	40.00		D/T FILED 4-19-41
UX.		0.50	TRANSMISSION LINE R/W PERPETUAL EASEMENT DATED 11-8-44. FORMERLY KNOWN AS TRACT NO. 7.
UX		20.00	Perpetual Restrictive Easement dated 7-3-56.
CORPORATION		1.00	PERPETUAL SEWAGE EASEMENT DTD. 7-31-72

AVIGAT

TRACT

CONTO

DAM SI

RESERV

PART OF FEE TRACT NO. 95 THAT ACCOUNTABILITY WAS ASSUMED BY FARM CREDIT ADM. 11-20-45. NOT INCLUDED IN -
OSED OF.
OSAL ACTIONS.

REVISIONS	DATED	
	10-24-49.	SUPERSEDES DRWG. 89-3 DUE PRE
	10-5-50	DUE TO FINAL AUDIT.
	1-8-51	WATER & SEWER LINES SHOWN ON
	6-4-53	DISPOSAL OF 95.80 ACRES SHOW
	1-9-57	RE-D 6345 & Tr. A-173-E Added du
	3-[illegible]-5-	ACREAGE OF EXCLUSIVE JURISI
	9-30-59	DUE TO SUPPLEMENTAL AUDIT
	5-16-61	DUE TO SUPPLEMENTAL AUDIT

RES

ENT

RES

DEPT OF HEALTH, EDUCATION & WELFARE

20, ACRES TO

DEPARTMENT OF TH
OFFICE OF THE MOBILE DIS
SOUTH ATLANTIC

DRAWN BY J.C.N.
TRACED BY H.M.P.
CHECKED BY H.M.P.

SUBMITTED BY:
CARTOGRAPHIC DRAFTSMAN

RECOMMENDED BY:
CHIEF, FINAL AUDIT SECTION

APPROVED BY:
REAL ESTAT

R

ALABAMA ARMY AM

MILITA

OFFICE, CHIEF OF ENGINEERS, WASHINGTON, D.C.

APPROVED

INSTALLATION OR PROJECT NO. 2962

SH

AL AUDIT	M.H.S.	
AL AUDIT	M.H.S.	
AL AUDIT	R.E.R.	
T	C.C.T.	
REVISIONS	BY	

(17)

COUNTY LINE

AVIGATION EASEMENTS

TRACT NUMBER — 99

CONTOUR LINES — 470

DAM SITE — D

RESERVOIR SITE — R

9-41

9-41
3-41
9-41
/ PERPETUAL EASEMENT DATED
WN AS TRACT NO.7.
Easement dated 7-3-56.
EASEMENT DTD. 7-31-72

ADM. 11-20-45. NOT INCLUDED IN -

DATED		BY
24-49.	SUPERSEDES DRWG. 89-3 DUE PRELIMINARY FINAL AUDIT.	H.M.P.
5-50	DUE TO FINAL AUDIT.	H.M.P.
8-51	WATER & SEWER LINES SHOWN ON TR. NO.7	
4-53	DISPOSAL OF 95.80 ACRES SHOWN	
9-57	RE-D 6345 & Tr. A-173-E Added due to Supplement Audit	H.M.P.
5-	ACREAGE OF EXCLUSIVE JURISDICTION REVISED	E.O.F.
30-59	DUE TO SUPPLEMENTAL AUDIT	J.F.S.
8-61	DUE TO SUPPLEMENTAL AUDIT	R.E.R.

DEPARTMENT OF THE ARMY
OFFICE OF THE MOBILE DISTRICT ENGINEER
SOUTH ATLANTIC DIVISION

C.N.
M.P.
M.P.

RAFTSMAN
Y:
SECTION

REAL ESTATE

ALABAMA ARMY AMMUNITION PLANT, ALABAMA

MILITARY RESERVATION

APPROVED BY: J.O. Haviland DATE 7-8-49
REAL ESTATE OFFICER

F OF ENGINEERS, WASHINGTON, D.C.

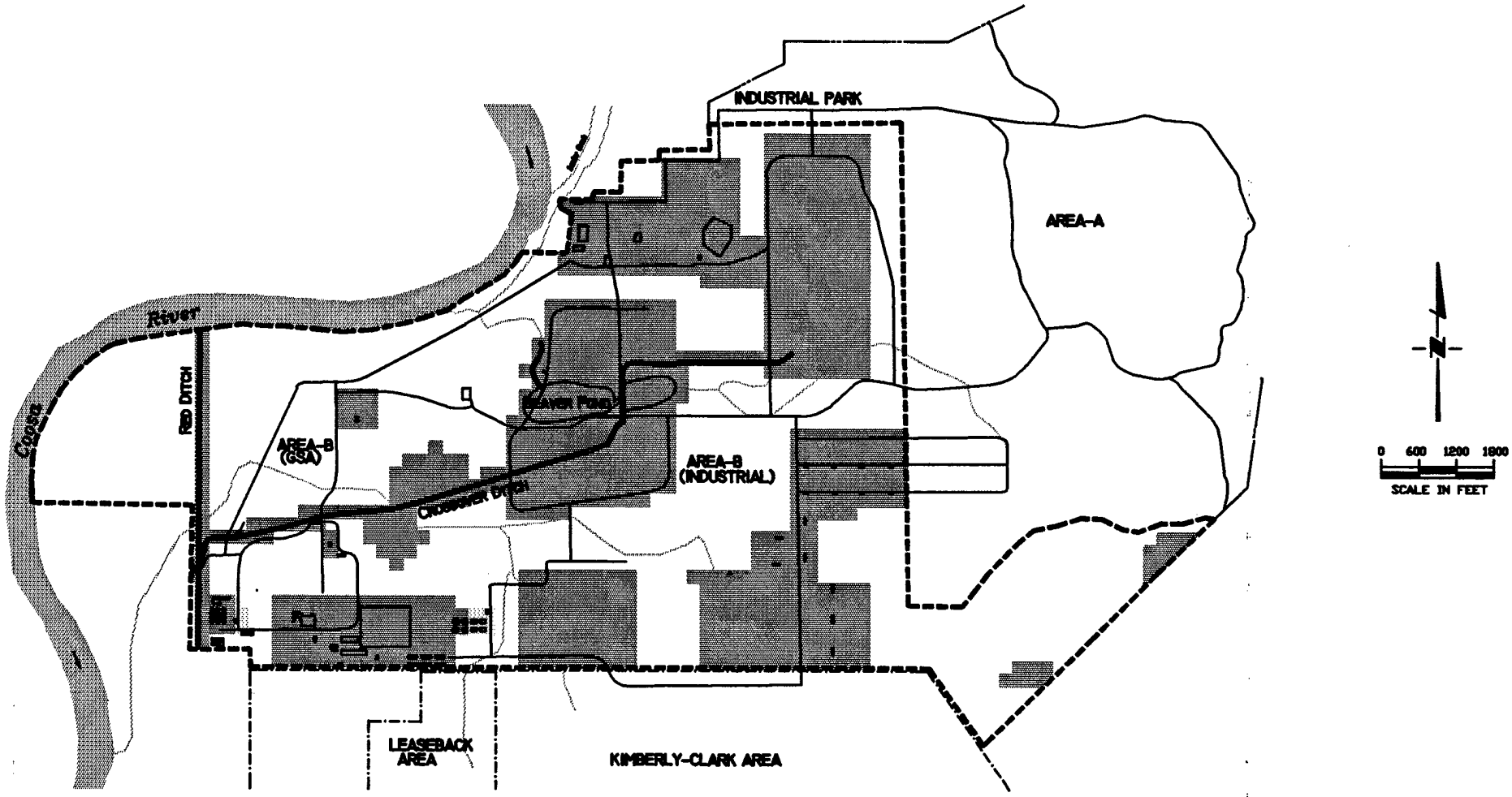
SCALE IN FEET
2000 1000 0 2000 4000

PROJECT NO. 2962 | SHEET 1 OF 1 | DRAWING NO. 89-4

(18)

FIGURE 5-3
SUMMARY CERFA MAP, ALABAMA ARMY AMMUNITION PLANT, ALABAMA

REVISION	
0	11/[illegible]/93
1	12/10/93
2	04/14/94



BRAC Property Boundary

CERFA Parcel

CERFA Parcel with Qualifiers

CERFA Disqualified Parcel

CERFA Excluded Parcel

Source: CERFA Investigation, April 1994

The Earth Technology Corporation

1450 KING STREET SUITE 600, ALEXANDRIA, VIRGINIA 22314

FIGURE 5-3
SUMMARY CERFA MAP
ALABAMA ARMY AMMUNITION PLANT,
TALLADEGA COUNTY, ALABAMA

DRAWN BY: MTM , JGC	DESIGNED BY: N/A	
CHECKED BY: CF	APPROVED BY: SY	DATE 04/14/94
TETC PROJECT NUMBER 931977-02	DRAWING NUMBER SHEET 1 OF 1	REV. NO. 2

APPENDIX A

REFERENCE LIST FOR ALABAMA ARMY AMMUNITION PLANT

APPENDIX A
REFERENCE LIST FOR ALABAMA ARMY AMMUNITION PLANT

Document	Date	Source
1. Installation Assessment of Alabama Army Ammunition Plant, Report No. 130	May 1978	TBD
2. Environmental Survey, Alabama Army Ammunition Plant, Final Report	July 1981	USAEC
3. Building Inspection, Sampling, and Analysis Alabama Army Ammunition Plant, Leaseback Area	September 1981	Library
4. Phase II - Industrial Area Groundwater Report Alabama Army Ammunition Plant, Final Report	November 1981	USEPA
5. Confirmatory Environmental Survey, Alabama Army Ammunition Plant, Final Report	June 1983	USAEC
6. Alabama Army Ammunition Plant Remedial Investigation, Final Report	July 1986	USAEC
7. Alabama Army Ammunition Plant Endangerment Assessment Final Report	February 1987	USEPA
8. Preliminary Natural Resource Survey, Alabama Army Ammunition Plant	September 1987	USEPA
9. Alabama Army Ammunition Plant Feasibility Study Draft Report	November 1987	USEPA
10. Alabama Army Ammunition Plant Area A Remedial Actions Final Report	February 1988	USEPA
11. Assessment of Applicable or Relevant and Appropriate Requirements for Alabama Army Ammunition Plant, Draft Report	July 1989	USEPA
12. Supplemental Remedial Investigation/Feasibility Study for Area B Alabama Army Ammunition Plant Draft Remedial Investigation, Volume 1	October 1990	ALAAP/ TETC
13. Supplemental Remedial Investigation/Feasibility Study for Area B Alabama Army Ammunition Plant Draft Final Remedial Investigation, Volume I and II	March 1991	USEPA
14. Remedial Investigation/Feasibility Study of the Industrial Sewer System, Alabama Army Ammunition Plant	September 1991	ALAAP/ TETC USEPA
15. Feasibility Study for the Alabama Army Ammunition Plant Soil Stockpile Area	October 1991	TBD
16. Proposed Plan for Early Remedial Action of Stockpile Soils at the Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit	December 1991	USAEC
17. Alabama Army Ammunition Plant Stockpile Soils Area Operable Unit Record of Decision	December 1991	USAEC
18. Supplemental Remedial Investigation/Feasibility Study for Area B Alabama Army Ammunition Plant, Final Baseline Risk Assessment, Volume I	April 1992	USAEC
19. Feasibility Study of the Industrial Sewer System Alabama Army Ammunition Plant	July 1992	USEPA
20. Supplemental Remedial Investigation/Feasibility Study for Soils in Area A Alabama Army Ammunition Plant Final Baseline Risk Assessment, Volume I	August 1992	USEPA
21. Supplemental Remedial Investigation/Feasibility Study for Soils in Area A Alabama Army Ammunition Plant Final Baseline Risk Assessment, Volume II	August 1992	USAEC
22. Supplemental Remedial Investigation/Feasibility Study for Area B Alabama Army Ammunition Plant, Final Baseline Risk Assessment, Volume II	August 1992	TBD
23. Final Report for the Alabama Army Ammunition Plant Leaseback Area Decontamination Operations Project - Part 1 Executive Summary	September 1992	Library

APPENDIX B

ERIIS DATA BASE SEARCH REPORT

ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES REPORT

PERTAINING TO:

ALABAMA ARMY AMMO PLANT
TALLADEGA COUNTY, AL

ON BEHALF OF:

THE EARTH TECHNOLOGY CORP.
1420 KING ST., STE. 600
ALEXANDRIA, VA 22314

PREPARED ON:

August 31, 1993

ERIIS REPORT NUMBER:

28666

ERIIS DISCLAIMER

The information contained in this report has been obtained from publicly available sources and other secondary sources of information produced by entities other than Environmental Risk Information & Imaging Services (ERIIS). Although great care has been taken by ERIIS in compiling and checking the information contained in this report to insure that it is current and accurate, ERIIS disclaims any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence or otherwise, and for any consequences arising therefrom. The data provided hereunder neither purports to be nor constitutes legal or medical advice. It is further understood that ERIIS MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OF MERCHANTABILITY, NOR ANY SUCH REPRESENTATIONS OR WARRANTIES TO BE IMPLIED WITH RESPECT TO THE DATA FURNISHED, AND ERIIS ASSUMES NO RESPONSIBILITY WITH RESPECT TO CUSTOMER'S, ITS EMPLOYEES', CLIENTS', OR CUSTOMERS' USE THEREOF. ERIIS SHALL NOT BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES RESULTING, IN WHOLE OR IN PART, FROM CUSTOMER'S USE OF THE DATA. Liability on the part of the Environmental Risk Information & Imaging Services (ERIIS) is limited to the monetary value paid for this report. The report is valid only for the geographical parameters specified on the cover page of this report, and any alteration or deviation from this description will require a new report. This report does not constitute a legal opinion.

ENVIRONMENTAL RISK INFORMATION & IMAGING SERVICES

RADIUS REPORT

REPORT NUMBER: 28666

STATE: AL
LATITUDE: 33.342013
LONGITUDE: -86.323749
ZIP CODES SEARCHED: 35078 35044 35160 35014

DATABASE	RADIUS (MILES)	RADIUS REPORTED SITES					NOT RADIUS REPORTED		TOTAL SITES
		Property	Property-1/16	1/16-1/2	1/2-1	>1	ZIP CODE	CITY/COUNTY	
NPL	2.750	NO	0	0	0	0	1	0	1
CERCLIS	2.750	NO	0	0	0	0	8	0	8
TRI	2.750	NO	0	0	0	0	2	0	2
RCRIS_TS	2.750	NO	0	0	0	0	1	0	1
RCRIS_LG	2.750	NO	0	0	0	0	5	0	5
RCRIS_SG	2.750	NO	0	0	0	0	9	0	9
DOCKET	2.750	NO	0	0	0	0	0	0	0
ERNS	2.750	NO	0	0	0	0	6	3	9
FINDS	2.750	NO	0	0	0	0	44	0	44
NUCLEAR		NR	NR	NR	NR	NR	0	0	0
OPENDUMP		NR	NR	NR	NR	NR	0	0	0
UST	2.750	NO	0	0	0	0	147	0	147
LANDFILL		NR	NR	NR	NR	NR	0	19	19
			0	0	0	0	223	22	245

Selection of PROPERTY records requires an accurate street address in the ERIIS job order.

ZIP CODE and CITY/COUNTY sites are not radius reportable due to insufficient and/or inaccurate addresses reported by federal/state agency. These sites are reported within the study site zip code(s) and/or city/county and may be within the study site radius. These sites require further investigation to accurately assess proximity to the study site.

A blank radius count indicates that the database was not searched by this radius per client instructions.

NR in a radius or zip code count indicates that the database cannot be reported by this search criteria due to insufficient and/or inaccurate addresses reported by a federal/state agency.

State data in paper format is sorted using the most specific secondary search criteria available (zip code, city, or county).

ERIIS Report Overview

The ERIIS Report consists of five (5) basic sections:

* Digital Custom Plotted Map
* Database Records
* Statistical Profile
* Sanborn Fire Insurance Map(s)
* Topographical Map

Digital Custom Map

Each site-specific Digital Custom Map is plotted using U.S. Census TIGER Files. The cross in the center of the map represents the study site. The red circle represents the study radius, usually one mile. Reported federal/state hazardous waste and toxic chemical sites are plotted on the map and are easily distinguished by different symbols.

Statistical Profile

The Statistical Profile is an at-a-glance numeric summary of the data included in the ERIIS Report.

Database Records

This section presents detailed federal and state database information for each site within the study radius. Sites are easily located on the digital map by using the number in the MAP ID column of the report.

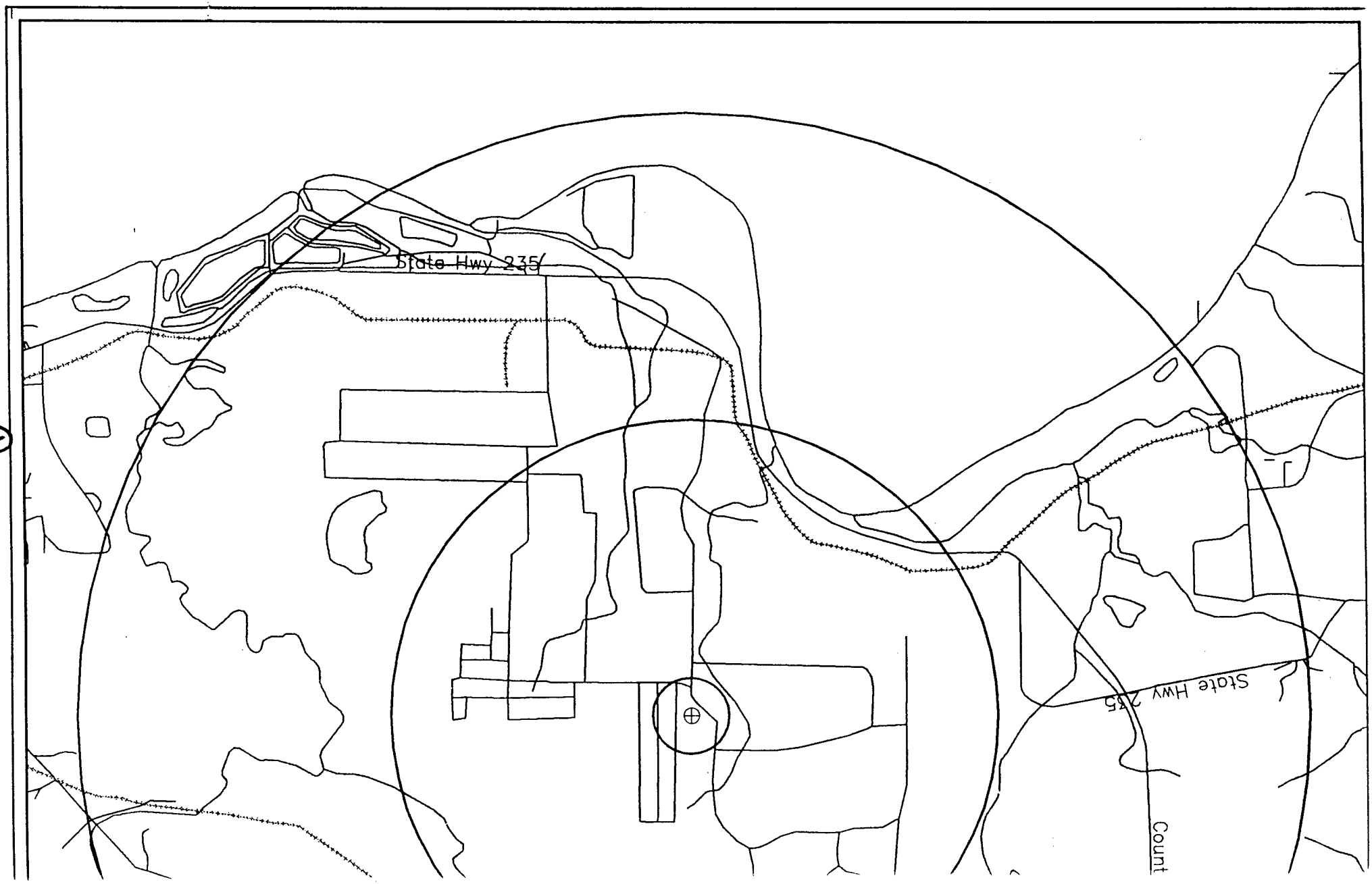
Note: Many of the sites reported in federal/state databases cannot be plotted due to inaccurate or incomplete addresses (e.g., PO Box number, street name with no number). Still, they are potentially within the study radius. ERIIS reports these sites using progressively broader search criteria to ensure that all potentially relevant hazardous sites are included. All zip codes within and intersected by the study radius are searched, as well as records that simply report the relevant city or county. Where applicable, federal and state database information is further subdivided.

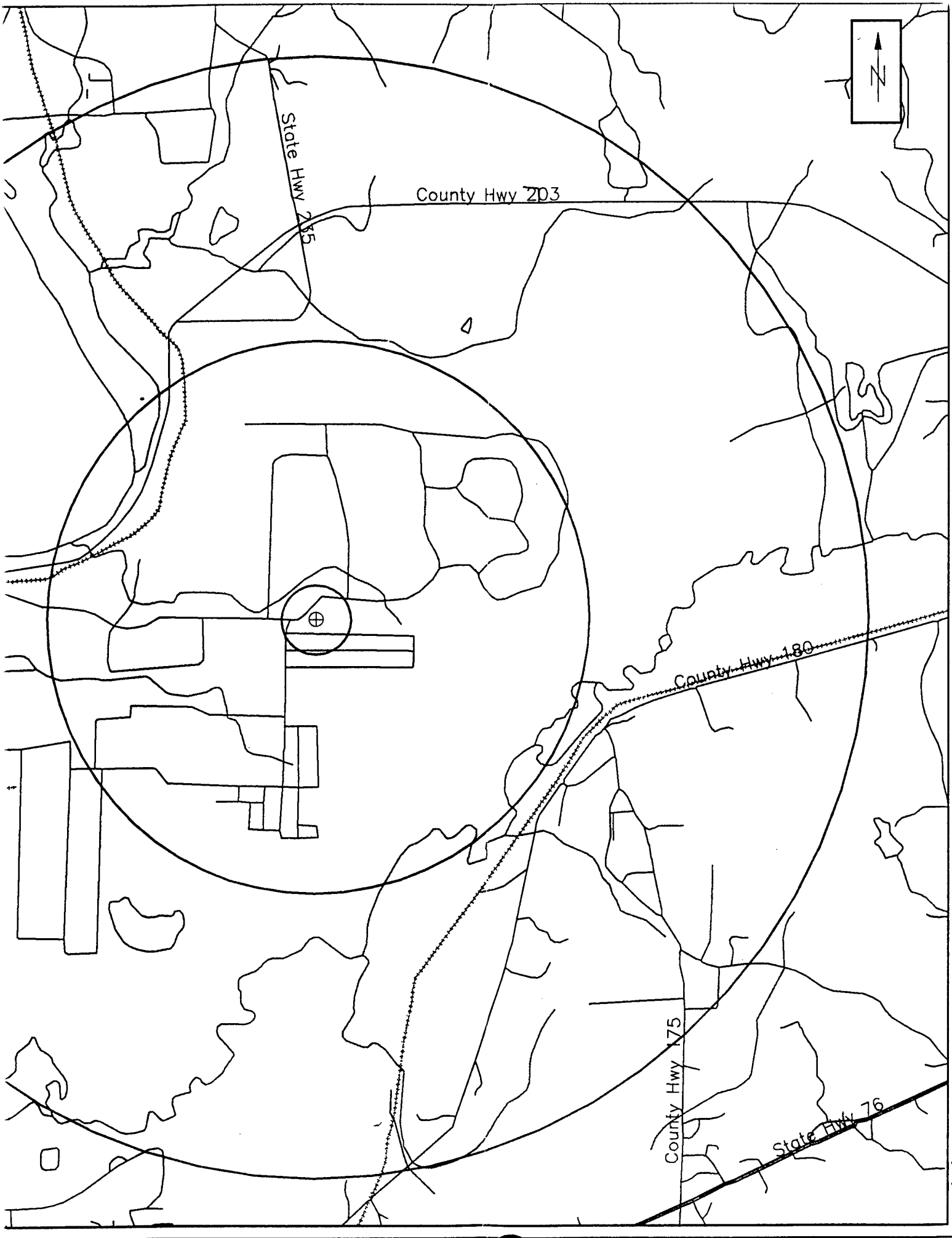
Sanborn Fire Insurance Maps

ERIIS has assembled a collection of Historical Sanborn Fire Insurance Maps covering 14,000 cities and towns. In some cases, however, the ERIIS Report will include a notice that no maps were found. This notice should serve as evidence of due diligence.

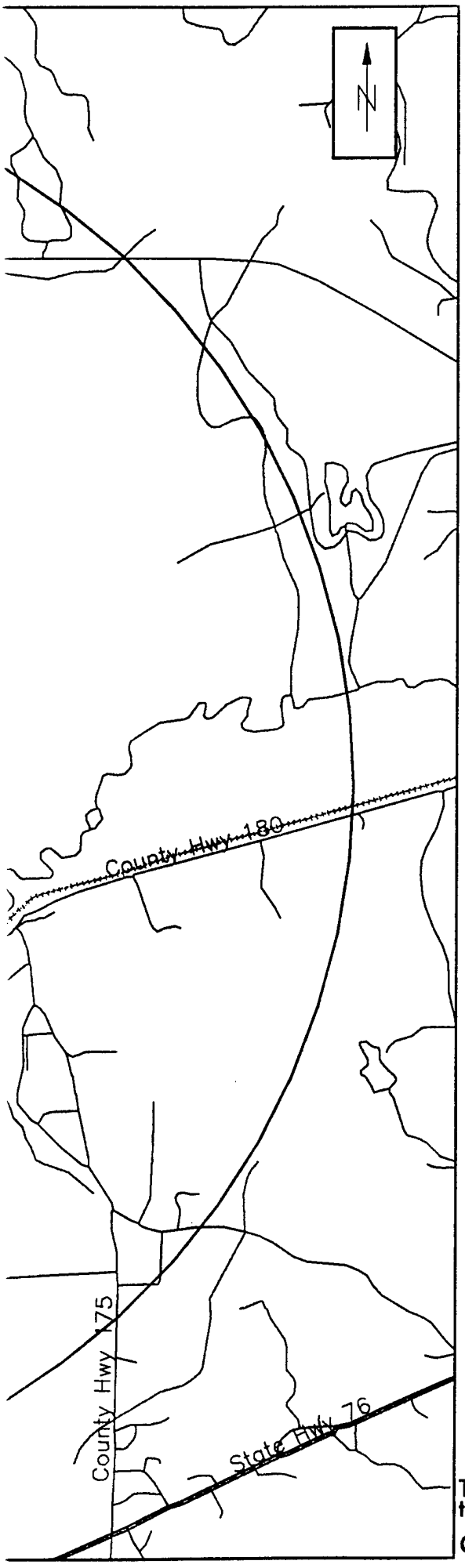
Topographic Map

ERIIS provides a topographic map with each report which accurately depicts the natural and man-made features of the land. The shape and elevation of the terrain are represented by contour lines and specific features, such as roads, towns, and vegetation, are portrayed by map symbols and colors. Standard topographic maps are produced at a 1:24,000 scale, or one inch represents 2000 feet.


State Hwy 235
State Hwy 235
Count


N
State Hwy 255
County Hwy 203
County Hwy 180
County Hwy 175
State Hwy 76

Th
to
Cc



ERIIS

1421 Prince Street, Ste 330
Alexandria, VA 22314
(703)836-0402 (800)989-0402
FAX: (703)836-0468

SITE INFORMATION

Alabama Army Ammo Plant
Talladega Co., AL
Talladega County
Job Number: 28666
Map Plotted: Aug 31, 1993

MAP LEGEND

- Hydrography
- Railroads
- Roads
- Highways
- CERCLIS 0 Site(s)
- NPL 0 Site(s)
- RCRIS_LG 0 Site(s)
- RCRIS_SG 0 Site(s)
- RCRIS_TS 0 Site(s)
- TRI 0 Site(s)
- UST 0 Site(s)

Miles

0 0.5

APPENDIX C

REGULATORY COMMENTS TO DRAFT ALABAMA ARMY AMMUNITION PLANT CERFA REPORT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

MAR 30 1994

Commander
Attn: Mr. Rich Isaac
U.S. Army Environmental Center
Building 4480-EA
Aberdeen Proving Ground, Maryland 21010-5401

RE: CERFA REPORT, AAAP

Dear Mr. Isaac

Following are the EPA comments derived from the review of the Community Environmental Response Facilitation Act (CERFA) Report dated November 15, 1993.

General Comments.

1. Should this report be called an Environmental Baseline Survey (EBS) instead of a CERFA Report. My reading of the DoD guidance does not mention any document named a CERFA Report, but does identify a EBS.

2. It is very unclear from reading the subject report if the entire base is the subject of the report or is the report only on one of the areas, A or B. This discrepancy exists through the entire report and will be brought forward again as a comment only if the occurrence is noted. However, the entire report should be reviewed by the contractor for these discrepancies prior to re-submittal to EPA.

3. It is likewise unclear if any portion of the "leaseback" area is included in the report, or should be included in the report. If the army is the owner of the property, should not the leaseback portion be included in the report?

4. The report is vague through out as to what exactly is the property known as AAAP. Are we talking about the entire base or a specific area? If the report is addressing only one area then to be sure, the adjoining area should be fully addressed as an "adjacent property" in the appropriate sections. The entire report should be scoured for this discrepancy.

5. There is only one passing comment concerning the removal of soil from Area A and the deposition of that soil on Area B. This removal and pending incineration should be elaborated upon to some extent in this report.

6. There is only one mention of the tornado that destroyed the stockpile soil storage building. Some elaboration on this event is warranted. The discussion should include some discussion of the resulting contaminated soil dispersion.

7. The reference list(Appendix A) is a very good list. Is this list a complete compendium of all facility environmental reports? I would suggest that this list of reports be used as a starting point in insuring completeness of the Administrative Record.

8. The maps included in this report are very hard to read and virtually uninformative. All maps need to be upgraded and the area of interest clearly identified.

9. The logic for scouring the base to look for additional areas of contamination, apart from the known areas, needs to be presented. It is the EBS report that is the vehicle that allows the Army to dispose of uncontaminated areas. The methodology utilized by the contractor needs to be understood and accepted by the regulatory community.

SPECIFIC COMMENTS.

1. Section 1.1, second paragraph, last sentence:
Is the statement concerning enhanced PAs in conflict with the statement at Section 2.1, 1st paragraph, last sentence?

2. Section 1.1, page 1-2, 1st paragraph, last sentence:
Does the report discuss AAAP, Area A Area or what?

3. Section 1.2 1st paragraph:
Are these definitions directly quoted from the amendments? The source of these definitions should be cited. Are they DoD wide or Army wide or peculiar to this installation?

4. Section 1.2 3rd bullet:
In the definition of" CERFA Disqualified Parcel", the term "evidence" is used. Just exactly what constitutes evidence? Are we talking about a past report with sampling, or are we talking about a report from a previous employee?

5. Section 1.3:
This section is ripe with references to AAAP. Should this be changed to Area specific nomenclature?

6. Section 2.0, 1st paragraph:
Another reference to AAAP

7. Section 2.1:
Were "enhanced PA's" done for this facility as suggested at Section 1.1, 2nd paragraph. See specific comment 1.

8. Section 2.4.2:
If the report does not address the entire facility, the other area is an adjoining property. Regardless, the Leaseback area should be addressed at this point in the report. Other references to the leaseback area should be included as appropriate.

9. Section 3.2:
Should the tornado and the stockpiled soil removal be discussed in this section? If not, why not?

10. Section 4.1, 1st paragraph:
What is meant by the term "BRAC Parcel at AAAP" in this sentence?

11. Section 4.1, 1st paragraph:
Are "AREEs" areas that were identified early in the process? Why are AREE's different than a parcel of property where someone stated that they knew of something hazardous disposed, but at this time no sampling or other investigation has been conducted to confirm or deny the allegation?

12. Section 4.1, page 4-9, 1st paragraph:
Some indication of the disposition of the burial trench allegation should be made at this point or subsequent in the report. In the second paragraph of this same discussion, there is a reference to the burial pits. Is this the same location as discussed above?

13. Section 4.1, page 4-9, paragraph, last sentence:
Something is wrong with this sentence.

14. Section 4.1, page 4-10 4th paragraph:
A statement is made that the Beaunit Company used some portion of the property for acid disposal. Was this Army property? Did the Army give permission for this activity? Is there any of the material remaining? Does the Army intend to approach this area as it would any other contaminated portion of the facility? Please elaborate at some length on this issue.

15. Section 4.1, page 4-11 5th paragraph:
This section is discussing the Lead Facility, and this paragraph uses the term "Rifle Powder Finishing Area".

16. Section 4.1, page 4-13, last paragraph:
Are lead batteries still on the surface of the ground at this area?

17. Section 4.2:
This portion of the report deserves some attention. Specifically, some explanation of the methodology or logic or procedure used to scour the entire remainder of the facility for dirty parcels should be put forth. The exact procedure should be presented.

18. Section 4.3:
This section should contain a full discussion of the Beaunit Company (disposal pits) and the leaseback area (drainage). These are real properties with real potential for contamination of the area being discussed in this report. See Gereral Comment # 9.

19. Section 4.3.1:
Should this section address potential areas where contamination from the operation of the Army facility has or could impact adjoining property?

20. Section 4.3.1, 1st bullet:
If the report is to address only Area A, the Area B is an adjoining property on the NPL.

21. Section 4.3.1, 2nd bullet:
The impact of the operations of the Beaunit Company on Army Property was put forth earlier in the report. Should this be mentioned here also?

22. Section 4.3.1, 3rd bullet:
The impact from ongoing operations at Kimberly Clark (leaseback area) should be addressed somewhere in the report and also mentioned at this location.

23. Section 4.6, page 4-21:
What is meant by the term "CERFA excluded, BRAC parcel"?

24. Section 4.6, page 4-21:
CRSA probably refers to the Coosa River Storage Annex. All references to the parent document should have been removed from this report prior to submittal.

25. Section 4.7, page 4-21:
The first sentence begins with ,"Any 1-acre parcel...". What is implied by this term?

26. Section 4.9, page 4-21:
The first sentence in this section is somewhat unclear.

Based on these comments, the EPA can not concur with this report as written.

Should you have any comments or need additional information, Please contact me at 404-347-3016. If your support contractor has questions concerning these comments I am available for consultation.

Sincerely,

Bart Reedy
Senior Remedial Project Manager

cc: C.H. Cox, ADEM

ADEM

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March 9, 1994

Department of the Army
U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401

ATTN: Richard Isaac

RE: Alabama Army Ammunition Plant (ALAAP)
Community Environmental Response Facility Act (CERFA) Report

Dear Mr. Isaac:

We have reviewed The Community Environmental Response Facility Action Report for ALAAP and would like to offer ADEM's comment:

> ADEM does no concur with Table 5-1, which is a classification of parcels. This non-concurrance is based upon the fact that it is premature to make such classifications. It is our understanding The Army is in final negotiations with a contractor to do further Area "B" investigations for a supplemental RI, which will include 27 more wells, collection of surface soil samples, and soil borings. Without the benefit of this information, ADEM defers our concurrences.

If you have any questions, please contact me at (205) 260-2785.

Sincerely,

C.H. Cox
Special Projects

CHC/sps
cc: Bart Reedy, EPA

DRAFT

ALABAMA ARMY AMMUNITION PLANT (ALAAP)
COMMUNITY ENVIRONMENTAL RESPONSE FACILITATION ACT (CERFA)
DRAFT REPORT
RESPONSE TO EPA REGION IV COMMENTS
1 APRIL 1994

1. The U.S. Army Environmental Center (USAEC) appreciates the effort of Environmental Protection Agency (EPA) Region IV and the State of Alabama Department of Environmental Management (ADEM) in reviewing and commenting on the CERFA reports for ALAAP. We provided this report for review and concurrence, in accordance with Public Law 102-426 (CERFA). We are pleased to provide the following responses to both EPA Region and ADEM comments. Army responses are provided in bold print.

2. EPA Region IV General Comments:

a. EPA Comment 1: Should this report be called an Environmental Baseline Survey (EBS) instead of a CERFA Report. My DOD guidance does not mention any document named a CERFA Report, but does identify a EBS.

Army Response: Clarification. DoD states that the CERFA analysis shall be based on an EBS; DoD does not indicate what the CERFA analysis i.e., the report, should be called. The Army believes the report is properly called a CERFA Report.

b. EPA Comment 2: It is very unclear from reading the subject report if the entire base is the subject of the report of is the report only on one of the areas, A or B. This discrepancy exists throughout the entire report and will be brought forward as a comment only if the occurrence in noted. However the entire report should be reviewed by the contractor for these discrepancies prior to re-submittal to EPA.

Army Response: Concur. The CERFA Report is based on Area B. Area A and the Leaseback Area shall be defined as an adjacent property. A clearer definition of what the CERFA parcel includes has been added to the Executive Summary. All discrepancies shall be corrected throughout the Report.

c. EPA Comment 3: It is likewise unclear if any portion of the "Leaseback" area is included in the report, or should be included in the report. If the Army is the owner of the property, should not the leaseback portion be included in the report?

Army Response: Concur. The Leaseback Area is an Adjacent Property. Section 2.2.2 and 4.3 has been revised to better define the Leaseback as an Adjacent Property.

d. EPA Comment 4: The report is vague throughout as to what exactly is the property known as ALAAP. Are we talking about the entire base or a specific area? If the report is addressing only one area then to be sure the adjoining area should be fully addressed as an "Adjacent Property" in the appropriate sections. The entire report should be scoured for the discrepancy.

Army Response: Concur. The CERFA Report is based on Area B. Area A, Leaseback Area, Beaunit site and Kimberly Clark Facility are defined as an Adjacent Property. A clear definition of what real property is included in the CERFA Report has been added to the Executive Summary and throughout the document as needed. A clearer definition of what is an adjacent property has been be added to Sections 2.1.2 and 4.3. All discrepancies shall be corrected throughout the Report.

e. EPA Comment 5: There is only one passing comment concerning the removal of soil from Area A and the disposition of the soil on Area B. This removal and pending incineration should be elaborated upon to extent in this report.

Army Response: Section 3.1 has been revised to better elaborate the movement and disposition of the Area A (Study Areas 12 and D) explosive contaminated soils.

f. EPA Comment 6: There is only one mention of the tornado that destroyed the stockpile soil storage building. Some elaboration on this event is warranted. Additionally, some discussion of the contaminated soil dispersion should be put forth.

Army Response: Concur. Section 3.2 has be revised to better elaborate the destruction and subsequent dispersion of contaminated soils stored in the Stockpiled Soils Storage Building.

g. EPA Comment 7: The reference list (Appendix A) is a very good list. Is this list a complete compendium of all facility environmental reports. I would suggest that this list of reports be used as a starting point in insuring completeness of the Administrative Record.

Army Response: Clarification. To the best of our knowledge Appendix A is a complete list of all environmental reports produced for ALAAP. The list of reports shall be used as a starting point for the Administrative Record.

h. EPA Comment 8: The Maps included in this report are very hard to read and virtually uninformative. All maps need to be upgraded and the area of interest clearly identified.

Army Response: Maps have been modified to more clearly identify building locations, sites of concerns and surface drainage.

i. EPA Comment 9: The logic for scouring the base to look for additional areas of contamination apart from the known areas needs to be presented. It is the EBS report that is the vehicle that allows the Army to dispose of uncontaminated areas. The methodology utilized by the contractor needs to be understood and accepted by the regulatory community.

Army Response: Concur. The CERFA Report for ALAAP is based on the same investigative protocol as an EBS. Section 2.0 has been modified to discuss the methodology of how the contractor obtained the data. Section 5.0 has been modified to discuss how the data was utilized in the determination of a CERFA category.

3. EPA Specific Comments.

a. EPA Comment 1: Section 1.1, second paragraph, last sentence: Is the statement concerning enhanced PAs in conflict with the statement at Section 2.1, 1st paragraph, last sentence.

Army Response: Concur. Last sentence in section 1.1, second paragraph has been deleted.

b. EPA Comment 2: Section 1.1, page 1-2, 1st paragraph, last sentence: Does the report discuss ALAAP, Area A or What.

Army Response: Concur. The CERFA report has been modified to address only Area B as the ALAAP property evaluated under CERFA (also see Army response to EPA's General Comment 2,3,4).

c. EPA Comment 3: Section 1.2, 1st paragraph: Are these definitions directly quoted from the amendments? The source of these definitions should be cited. Are they DOD wide or Army wide or peculiar to this installation.

Army Response: Clarification. The definitions presented are not quotes from the amendments. The definitions were developed by USAEC and are currently being utilized by Army BRAC Facilities requiring CERFA evaluation. Section 1.2 has been modified to better describe each parcel designation designator and to identify the source of the definitions.

d. EPA Comment 4: Section 1.2, 3rd bullet: In the definition of CERFA Disqualified Parcel the term "evidence" is used. Just exactly what constitutes evidence? Are we talking about past report with sampling, or are we talking about a report from previous employee?

Army Response: Clarification. The term "evidence" refers to either written or verbal conclusive information gathered during the seven step investigative process found in the CERFA law which can be used in the designation of parcels pursuant to CERFA.

e. EPA Comment 5: Section 1.3: This section is ripe with references to ALAAP. Should this be change to Area specific nomenclature?

Army Response: Concur. The CERFA report has been modified to address only Area B as the ALAAP real property evaluated pursuant to CERFA (also see Army response to EPA's General Comment 2,3,4).

f. EPA Comment 6: Section 2.0, 1st paragraph: Another reference to ALAAP.

Army Response: Concur. The CERFA report has been modified to address only Area B as the ALAAP property being evaluated under CERFA (also see Army response to EPA's General Comment 2,3,4).

g. EPA Comment 7: Section 2.1: Were "enhanced PAs" done for this facility as suggested at Section 1.1, 2nd paragraph. See specific comment 1.

Army Response: Concur. Enhanced PAs were not completed at ALAAP. References to an Enhanced PAs at ALAAP have been deleted.

h. EPA Comment 8: Section 2.4.2: If the report does not address the entire facility, the other area is an adjoining property. Regardless, the Leaseback Area should be addressed at this point in the report. Other references to the leaseback area should be included as appropriate.

Army Response: Concur. The Leaseback Area is considered as an Adjacent Property. Section 2.4.2 and 4.3 has been changed to better define the Leaseback as an Adjacent Property.

i. EPA Comments 9: Section 3.2: Should the tornado and the stockpiled soil removal be discussed in this section? If not, why not?

Army Response: Concur. Section 3.2 has been modified as requested.

j. EPA Comment 10: Section 4.1, 1st paragraph: What is meant by the term "BRAC Parcel at ALAAP" in this sentence?

Army Response: Concur. The term BRAC Parcel has been deleted throughout the report and replaced with BRAC Property.

k. EPA Comment 11: Section 4.1, 1st paragraph: Are "AREEs" areas that were identified early on in the process? Why are they different than a parcel of property where someone stated

that they knew of something hazardous disposed, and at this time no sampling or other investigation has been conducted to confirm or deny the allegation?

Army Response: Concur. The term AREEs has been deleted throughout the report and replaced with Additional Areas Identified. These areas are in addition to areas of concern previously known to the CERFA investigation.

l. EPA Comment 12: Section 4.1, page 4-9, 1st paragraph: Some indication of the disposition of the burial trench allegation should be made at this point or subsequent in the report. In the second paragraph of this same discussion, reference to the burial pits. Is this the same location as discussed above.

Army Response: Concur. The burial trenches and the burial pit areas are one in the same. The report has been modified to describe this site as the Burial Trenches Area.

m. EPA Comment 13: Section 4.1, page 4-9, paragraph, last sentence: Something is wrong with this sentence.

Army Response: Concur. The sentence has been revised.

n EPA Comment 14: Section 4.1, page 4-10, 4th paragraph: A statement is made that the Beaunit Company used some portion of the property for acid disposal. Was this Army Property? Did the Army give permission for this activity? Is there any of the material remaining? Does the Army intend to approach this area as it would any other contaminated portion of the facility? Please elaborate at some length on this issue.

Army Response: Clarification. Beaunit Mills Company leased Army property for the purpose of producing rayon fabric. In the process of making the fabric, acid, cellulose and organic materials were generated. The acid, cellulose and organic wastes generated from the process was disposed of in three out of the five settling basins . The settling basins were designed and installed by the Army, however, they were never used by the Army. The Army has initiated action to investigate this site as part of the Inclusive RI/FS to begin this summer. To better characterize this site monitoring wells and surface soil sampling will be taken.

o. EPA Comment 15: Section 4.1, page 4-11, 5th paragraph: This section is discussing the Lead Facility, and the paragraph uses the term "Rifle Powder Finishing Area.

Army Response: Concur. This paragraph has been corrected to reflect the Lead Facility.

p. EPA Comment 16: Section 4.1, page 4-13, last paragraph: Are lead batteries still on the surface of the ground at this area?

Army Response: Clarification. Yes, sampling was conducted in 1989 and no elevated levels of contamination was found.

q. EPA Comment 17: Section 4.2: This portion of the report deserves some attention. Specifically, some explanation of the methodology or logic or procedure used to scour the entire remainder of the facility for dirty parcels should be put forth. The exact procedure should be presented.

Army Response: Concur. See Army Response 2.i

r. EPA Comment 18. Section 4.3: This section should contain a full discussion of the Beaunit Company (disposal pits), Kimberly Clark and the Leaseback Area (drainage). These are real properties with real potential for contamination of the area being discussed in this report.

Army Response: Concur. Section 4.3.1 has been revised to address drainage and migration pathways onto Area B ALAAP for the above mentioned sites.

s. EPA Comment 19: Section 4.3.1: Should this section address potential areas where contamination from the operation of the Army Facility has or could be impacted from adjoining property.

Army Response: Concur. Section 4.3.1 has been revised to address drainage and migration pathways from Area B ALAAP that may impact adjoining properties.

t. EPA Comment 20: Section 4.3.1, 1st bullet: If the report is only addressing Area B, the Area A is an Adjoining property on the NPL.

Army Response: Concur. The CERFA Report is based on Area B. Area A is defined as an Adjacent Property. A clearer definition of what the property being evaluated under CERFA includes has been added to the Executive Summary and Section 4.3.1 1st bullet has been revised to include Area A as an Adjacent Property.

u. EPA Comment 21: Section 4.3.1, 2nd bullet: The impact of the operation of the Beaunit Company on the Army property was put forth early in the report. Should this be mentioned here also?

Army Response: Concur. Section 4.3.1, 2nd bullet has been revised to include the impact of Beaunit Mills Company operations on Area B ALAAP.

v. EPA Comment 22: Section 4.3.1, 3rd bullet: The impact from ongoing operations at Kimberly Clark (Leaseback Area) should be addressed somewhere in the report and also mentioned at this location.

Army Response: Concur. Section 4.3.1, 3rd bullet has been revised to include the impact of the Leaseback Area and Kimberly Clark on Area B ALAAP.

w. EPA Comment 23: Section 4.6, page 4-21: What is meant by the term "CERFA excluded, BRAC Parcel"?

Army Response: Clarification. CERFA Excluded, BRAC Parcel or CERFA Excluded Parcel is defined as a portion of the installation real property retained by the Department of Defense, and therefore not explicitly investigated for CERFA. A CERFA Excluded Parcel also includes any portions of the installation which have already been transferred by deed to a party outside the federal government, or by transfer assembly to another federal agency.

x. EPA Comment 24: Section 4.6, page 4-21: CRSA probably refers to the Coosa River Storage Annex.

Army Response: Concur. CRSA has been changed to read ALAAP.

y. EPA Comment 25: Section 4.7, page 4-21: The first sentence begins with "Any 1-acre parcel....". What is implied by the term?

Army Response: Clarification. The Army chose a one-acre grid to aid in the presentation of data gathered during the CERFA report preparation, and to facilitate use of the document by reuse groups and others. The one-acre parcel size was chosen as a generally redevelopable parcel size for either industrial or residential uses. However, the grid does not drive reuse nor restrict it; reuse decisions should be made irrespective of the grid.

z. EPA Comment 26: Section 4.9, page 4-21: The first sentence in this section is somewhat unclear.

Army Response: Concur. Section 4.9 has been deleted.

4. EPA Overall Comment:

a. EPA Comment 1. Based on these comments, the EPA can not concur with this report as written.

Army Response: The Army cover letter transmitting the CERFA

report indicated that the report was a draft. Moreover, the transmittal letter indicated that the Army was pursuing "concurrent review" of the report, and that the inevitable errors would be corrected. As there will be no interim draft of this report, the next report that you will receive is the final report. It is the Army's desire that following your review of the Army's response, your agency can concur with the Final CERFA Report for ALAAP.

5. State of Alabama Comment:

a. State of Alabama Comment 1: ADEM does not concur with Table 5-1, which is a classification of parcels. This non-concurrence is based upon the fact that it is premature to make such classification with a contractor to do further Area "B" investigations for a supplemental RI, which will include 27 more wells, collection of surface soil samples, and soil borings. Without the benefit of this information, ADEM defers our concurrences.

Army Response: Non-Concur. The Community Environmental Response Facilitation Act (CERFA) required the Army undertake a 7 step process (as defined in Public Law 102-426) to determine whether or not there is any evidence of contamination which would preclude a parcel from being designated as "uncontaminated". The Army's contractors sought all available information in completing this process. The Army believes the law is clear in this regard: if the 7 step protocol failed to reveal a basis for disqualification of a parcel, Public law 102-426 allows a designation of "uncontaminated". The Army would ask you reconsider your non-concurrence of Table 5-1 and focus on the requirement to obtain compliance with CERFA.

APPENDIX D

DETAILED DATA BASE, ALABAMA ARMY AMMUNITION PLANT, ALABAMA

C:\CERFA\ALA\MASTER\YES-NO.ALA
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ALABAMA ARMY AMMUNITION PLANT
CERFA CATEGORY MATRIX

	CERFA PARCEL WITH QUALIFIERS CATEGORIES						CERFA DISQUALIFIED CATEGORIES			
LOCATION	ASBESTOS	LEAD	RADON	RADIO-NUCLIDES	UNEXPLODED ORDNANCE	PCBs STORAGE	PETROLEUM RELEASE	PETROLEUM STORAGE	HAZARDOUS SUBSTANCE RELEASE	HAZARDOUS SUBSTANCE STORAGE
Building 2140									Y	
Building 2170									P	
Building 223B										P
Building 223C	Y									
Building 223E	Y									
Building 223F	Y									
Building 223G	Y									
Building 223H	Y									
Building 2240									P	
Building 227D									P	
Building 2403	Y									
Building 302B								Y		
Building 702A		P								
Building 703A									P	
Building 703E	Y								P	
Building 704Y									P	
Building 707H	Y									
Building 708A	Y					P			P	
Building 715C								Y	P	
Building 717A	Y								P	
Building 724E								Y		
Coke Oven									P	
Tetryl Manufacturing Area									Y	
Flashing Ground									Y	
Propellant Shipping Area									Y	
Blending Tower Area									Y	
Lead Remelt Facility									Y	

LOCATION	CERFA PARCEL WITH QUALIFIERS CATEGORIES						CERFA DISQUALIFIED CATEGORIES			
	ASBESTOS	LEAD	RADON	RADIO-NUCLIDES	UNEXPLODED ORDNANCE	PCBs STORAGE	PETROLEUM RELEASE	PETROLEUM STORAGE	HAZARDOUS SUBSTANCE RELEASE	HAZARDOUS SUBSTANCE STORAGE
Smokeless Powder Manufacturing Area									Y	
Rifle Powder Finishing Area									Y	
Red Water Ditch									Y	
Demolition Landfill									Y	
Storage Battery/Demolition Debris										Y
Cross Over Ditch									Y	
Beaver Pond Drainage System									Y	
Sanitary Landfill & Lead Facility									Y	
Manhattan Project Area									Y	
Red Water Storage Basin									Y	
Southern TNT Manufacturing Area									Y	
Northern TNT Manufacturing Area									Y	
Acid/Organic Manufacturing Area									Y	
Aniline Sludge Basin									Y	
Stockpile Soils Area A										Y
Stockpile Soils Area A										Y

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 43

ASBESTOS-CONTAINING MATERIAL

LOCATION	STATUS	LOCATION COMMENTS	REMEDIATION OR MITIGATION	APPENDIX A REFERENCE(S)
Building 223C	Y			2
Building 223E	Y			2
Building 223F	Y			2
Building 223G	Y			2
Building 223H	Y			2
Building 2403	Y			2
Building 703E	Y			2
Building 707H	Y			2
Building 708A	Y			2
Building 717A	Y			2

STATUS=Y - ASBESTOS CONTAINING MATERIAL PRESENT
STATUS=P- POSSIBLE ASBESTOS CONTAINING MATERIAL PRESENT

Records printed: 10

LEAD-BASED PAINT

LOCATION	STATUS	LOCATION COMMENTS	YEAR BUILT	REMEDIATION OR MITIGATION	APPENDIX A REFERENCE(S)
Building 702A	P		1942		27,28,29

STATUS=Y - LEAD-BASED PAINT PRESENT
STATUS=P - POSSIBLE LEAD-BASED PAINT PRESENT

Records printed: 1

PCBs STORAGE

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	DATE START	DATE INACTIVATED	APPENDIX A REFERENCE(S)	REMEDIATION OR MITIGATION
Building 708A	P	Cafeteria	Transformers	PCBs	Multiple	1942	Active	27,28	

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 1

PETROLEUM STORAGE

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	DATE INACTIVATED	APPENDIX A REFERENCE(S)	REMEDIATION OR MITIGATION
Building 302B	Y	Ammonia Oxidation Plant	UST	Gasoline/Diesel	12,000 gal	1993	28	Removed
Building 715C	Y	Flammable Materials Storehouse	UST	Gasoline/Diesel	12,000 gal	1993	28	Removed
Building 724E	Y	Gas Station	UST	Gasoline			29	Removed

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 3

HAZARDOUS SUBSTANCE STORAGE

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	DATE START	DATE INACTIVATED	APPENDIX A REFERENCE(S)	REMEDIATION OR MITIGATION
Building 223B	P	Pesticide Storage	Containers	Fertilizers & Pesticides		1971	1991	27,28	
Storage Battery/Demolition Debris	Y	Storage Battery/Demolition Debris	Piles	Battery/Demolition Debris	100,000 sq. ft.	1984		6,12	Active
Stockpile Soils Area A	Y	Stockpile Soils Area	Piles	Explosive, Lead, Asbestos	35,000 CY	1986		17,27,28	Active - Thermal treatment scheduled
Stockpile Soils Area B	Y	Stockpile Soils Area	Piles	Explosive, Lead, Asbestos	35,000 CY	1986		17,27,28	Active - Thermal treatment scheduled

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 4

HAZARDOUS SUBSTANCE RELEASE

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	DATE RELEASE	APPENDIX A REFERENCE(S)	REMEDIATION OR MITIGATION
Building 2140	Y	Building 2140 Asbestos disposal	Soil	Asbestos			27, 28	
Building 2170	P	Downed Utility Poles	Soil	PCBs	3		27,27a	
Building 2240	P	Downed Utility Poles	Soil	PCBs	8		27,28	
Building 227D	P	Downed Utility Poles	Soil	PCBs	1		27,28	
Building 703A	P	Downed Utility Poles	Soil	PCBs	3		27,28	
Building 703E	P	Downed Utility Poles	Soil	PCBs	2		27,28	
Building 704Y	P	Downed Utility Poles	Soil	PCBs	3		27,28	
Building 708A	P	Downed Utility Poles	Soil	PCBs	3		27,28	
Building 715C	P	Downed Utility Poles	Soil	PCBs	1		27,28	
Building 717A	P	Downed Utility Poles	Soil	PCBs	3		27,28	
Coke Oven	P	Coke Oven	Soil	PCBs			27, 28	
Tetryl Manufacturing Area	Y	Tetryl Manufacturing Area	Ground water, Soil	Nitroaromatics, Asbestos			2,5,6	
Flashing Ground	Y	Flashing Ground	Soil, Groundwater	Nitroaromatics, Pb, Asbestos			2,5,6,12	
Propellant Shipping Area	Y	Propellant Shipping Area	Soil	Nitroaromatics, Asbestos			2	
Blending Tower Area	Y	Blending Tower Area	Soil	Asbestos			2	
Lead Remelt Facility	Y	Lead Remelt Facility	Soil	Pb, Asbestos			2,5,6	

LOCATION	STATUS	LOCATION COMMENTS	TYPE	SUBSTANCE	QUANTITY	DATE RELEASE	APPENDIX A REFERENCE(S)	REMEDIATION OR MITIGATION
Smokeless Powder Manufacturing Area	Y	Smokeless Powder Facility	Sediment	Nitroaromatics			2	
Rifle Powder Finishing Area	Y	Rifle Powder Finishing Area	Soil	Nitroaromatics, Asbestos			2	
Red Water Ditch	Y	Red Water Ditch	Soil, Sediment, Surface Water	Nitroaromatics, Pb, Asbestos			2,6,12	
Demolition Landfill	Y	Demolition Landfill	Soil	Pb, Nitroaromatics, Asbestos			2,5,6,12	
Cross Over Ditch	Y	Cross Over Ditch	Sediment, Surface Water	Nitroaromatics, Asbestos, Lead, Cadmium, Copper, Zinc			2,5,6,12	
Beaver Pond Drainage System	Y	Beaver Pond Drainage System	Sediment, Surface Water	Nitroaromatics, Asbestos			2,5,6	
Sanitary Landfill & Lead Facility	Y	Sanitary Landfill& Lead Facility	Soil	Pb, Hg, Nitrobenzene, Nitroaromatics, Asbestos			2,6	
Manhattan Project Area	Y	Manhattan Project Area	Soil	Pb, Asbestos			2	
Red Water Storage Basin	Y	Red Water Storage Basin	Groundwater, Sediment	Nitroaromatics			2	
Southern TNT Manufacturing Area	Y	Southern TNT Manuf Area	Soil, Groundwater	Nitrobenzene, Nitroaromatics, Asbestos			2,5,6,12	
Northern TNT Manufacturing Area	Y	Northern TNT Manuf. Area	Soil, Groundwater	Nitroaromatics, Asbestos			2,5,6,12	
Acid/Organic Manufacturing Area	Y	Acid/Organic Manuf. Area	Soil, Groundwater	Nitrobenzene, Nitrate, Nitrite, Asbestos			2,6	
Aniline Sludge Basin	Y	Aniline Sludge Basin	Sediment, Groundwater	Nitroaromatics, Cd, Ni, Cr, Cu, Zn			2,5,6,12	

STATUS=Y - SUBSTANCE PRESENT
STATUS=P - POSSIBLE SUBSTANCE PRESENT

Records printed: 29